No. Pages : 187

TOP SECRET

COPY NO.: 49

25X1

Joint Photographic Intelligence Report

RADIO STATIONS

WITHIN A

50-NAUTICAL-MILE RADIUS OF MOSCOW

ARMY NAVY CIA

PIC/JR-8/59

JUNE 1959

[redacted] 25X1

COORDINATED, PUBLISHED, AND DISSEMINATED BY

CENTRAL INTELLIGENCE AGENCY

PHOTOGRAPHIC INTELLIGENCE CENTER

25X1

This document contains information usable only within the [redacted] It is to be seen on a MUST-KNOW BASIS ONLY BY PERSONNEL ESPECIALLY INDOCTRINATED AND AUTHORIZED. Reproduction is prohibited unless approved by the originator.

TOP SECRET

Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6 25X1

WARNING

This material contains information affecting the National Defense of the United States within the meaning of the espionage laws, Title 18, USC, Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

RADIO STATIONS
WITHIN A
50-NAUTICAL-MILE RADIUS OF MOSCOW

PIC/JR-8/59

JUNE 1959

PREFACE

This joint photographic intelligence report has been prepared by the Army, Navy, and Central Intelligence Agency, under CIA chairmanship. It is in partial answer to CIA RR/E/R-89/58, Army SRI-151-1-58, and Navy DNI/9/57, which are requirements requesting an analysis of all radio stations and microwave facilities within a 50-nautical-mile radius of Moscow. This report covers all radio stations in this area. Microwave communication facilities are covered separately in PIC/JR-9/59.

Information based on an analysis of aerial and ground photography has been supplemented by data from numerous collateral reports. A helpful analysis of these reports through [redacted] was prepared by the Radio Stations Branch, OCR/CIA. 25X1

Stations described in detail in this report are named after the nearest town. Numbers have been assigned to all stations for convenient map and table reference. Radio stations with at least 50 stick masts are called antenna farms. Distances from Moscow are measured from the Kremlin. Both geographic and UTM coordinates are given for locations of installations; the UTM coordinates are from AMS Map Series N501, scale 1:250,000.

PIC/JR-8/59

TABLE OF CONTENTS

GENERAL

This report is a comprehensive analysis, based on aerial and ground photography and collateral sources, of 105 radio stations, including 18 antenna farms with over 50 masts each; one television station; and three Krug sites within a 50-nautical-mile (nm) radius of Moscow. Excluded are microwave facilities, air navigation facilities other than the Krug sites which may be associated with air navigation, and surface-to-air communication facilities of the kind normally found at airfields.

25X1 Of the 109 installations, 44 have been identified from photography. Aerial photography of [redacted] covers about half of the area within a 50-nm radius of Moscow, but less than one fourth of this coverage is usable (i.e., less than one eighth of the total area), the remainder being cloud covered. Seventeen installations have been identified on this photography. World War II aerial photography covers the reported locations of 108 of the 109 installations included in this report. However, only 22 stations can be identified on this [redacted] photography. Ground photography 25X1 dated 1954-1958 is available for 35 of the 109 listed installations. A comparison of the 22 stations identifiable on World War II aerial photography with later coverage on [redacted] aerial photography and 1954-1958 ground photography reveals that nearly all have been expanded since [redacted] in the number of structures or antennas.

25X1

25X1

25X1

A detailed photographic analysis has been prepared on 28 installations, using aerial photography for 25 and ground photography for 3. All data available on the remaining 81 installations has been tabulated in a table beginning on page 142 of this report. This data includes the type, location, and description of each installation. This report also includes two maps, one showing the location of the installations within a 50-nm radius of the city of Moscow (enclosed at the end of this report), and the other showing the location of the installations within the city proper (see page 111). Ground photography on 10 of the 81 tabulated stations appears on pages 182 thru 186.

25X1

NUMBER 6

BRATOVSHCHINA RADIO STATION

I. GENERAL

Bratovshchina Radio Station is located 22 nautical miles north-northeast of Moscow on the east side of the Moscow/Zagorsk highway between the 43 and 45 kilometer markers (Figure 1). The station, which is served by an all-weather road, covers approximately 720 acres.

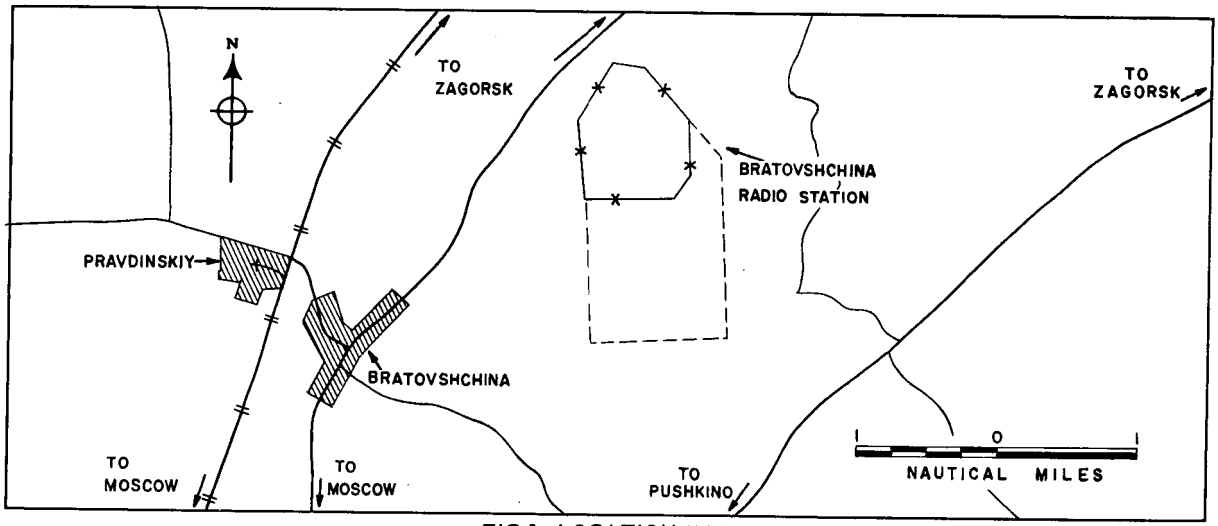


FIG.1. LOCATION MAP

25X1 Aerial photography of [redacted] shows the station to include two areas. One area (A in Figure 2), enclosed by a fence, contains a large T-shaped control building, a possible cooling tower, barracks, and eight self-supporting lattice towers. The other area (B in Figure 2), located immediately south of Area A, was under construction in [redacted] Ground photography of 1950-57 indicates that since [redacted] Area B had been completed and that both areas had undergone considerable expansion in both structures and antennas. 25X1

25X1

25X1

PIC/JR-8/59

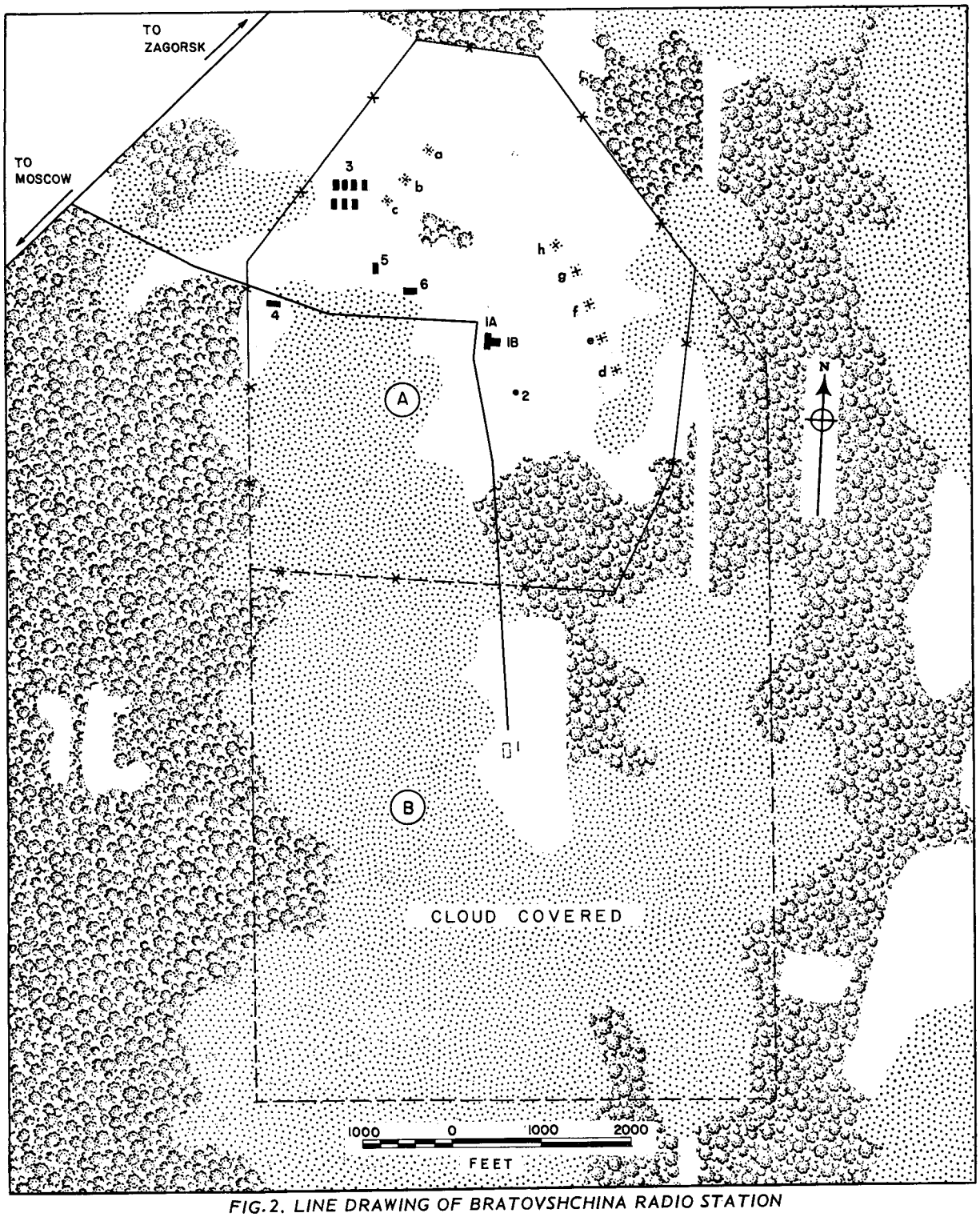


FIG. 2. LINE DRAWING OF BRATOVSHCHINA RADIO STATION

25X1

II. STRUCTURES

Ground photography of 1950-57 shows several buildings not on [redacted] 25X1 photography, including one reported to measure 150 by 60 by 70 feet and three large two-story, hip-roofed possible barracks (Figure 3). The

FIG.3. THREE LARGE TWO-STORY POSSIBLE BARRACKS AT BRATOVSHCHINA RADIO STATION (1957)

25X1 following is a tabulation of the significant structures in the station area appearing on [redacted] photography (item numbers are keyed to Figure 2).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
Area A				
1	Control building	3	Flat	-
1a	Base	3	-	180 x 60
1b	Wing	3	-	160 x 55
2	Possible cooling tower	-		35 x 35 x 40
3	7 barracks	1	Gable	160 x 55
4	Probable guardhouse	1	Gable	145 x 40
5	Support-type building	1	Gable	145 x 40
6	Support-type building	1	Gable	125 x 90
Area B				
1	Possible control building U/C	-	-	125 x 90

25X1

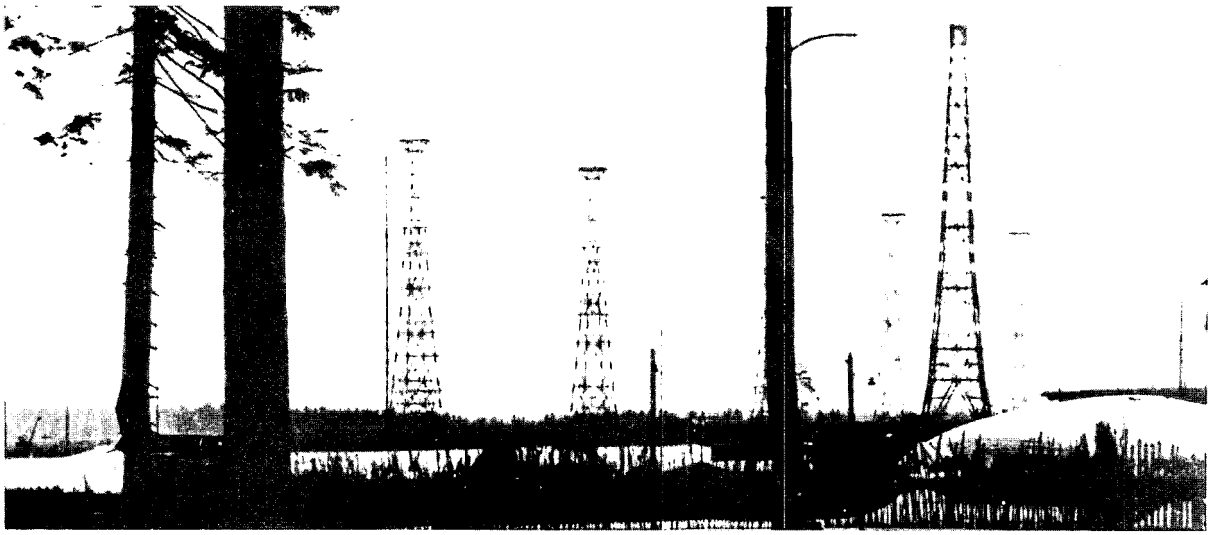
III. ANTENNAS

Aerial photography of [redacted] shows eight self-supporting lattice towers within Area A. Three of these towers (Figure 2, items a-c) are on the northwest side of Area A. A perpendicular to a line projected between these towers has an azimuth orientation of [redacted] degrees. The other five towers (Figure 2, items d-h) are on the northeast side of the area. A perpendicular to a line projected between towers d-g has an azimuth orientation of 70/250 degrees and between towers g and h an azimuth orientation of [redacted] degrees. Each tower measures approximately 220 feet high, and the towers are approximately 400 feet apart. Ground photography of 1950-1958 (Figure 4) shows numerous steel self-supporting lattice towers supporting curtain antenna arrays; numerous stick masts, some of which appear to form rhombic patterns; and numerous VHF yagi-type antennas mounted on poles.

25X1

25X1

25X1



25X1

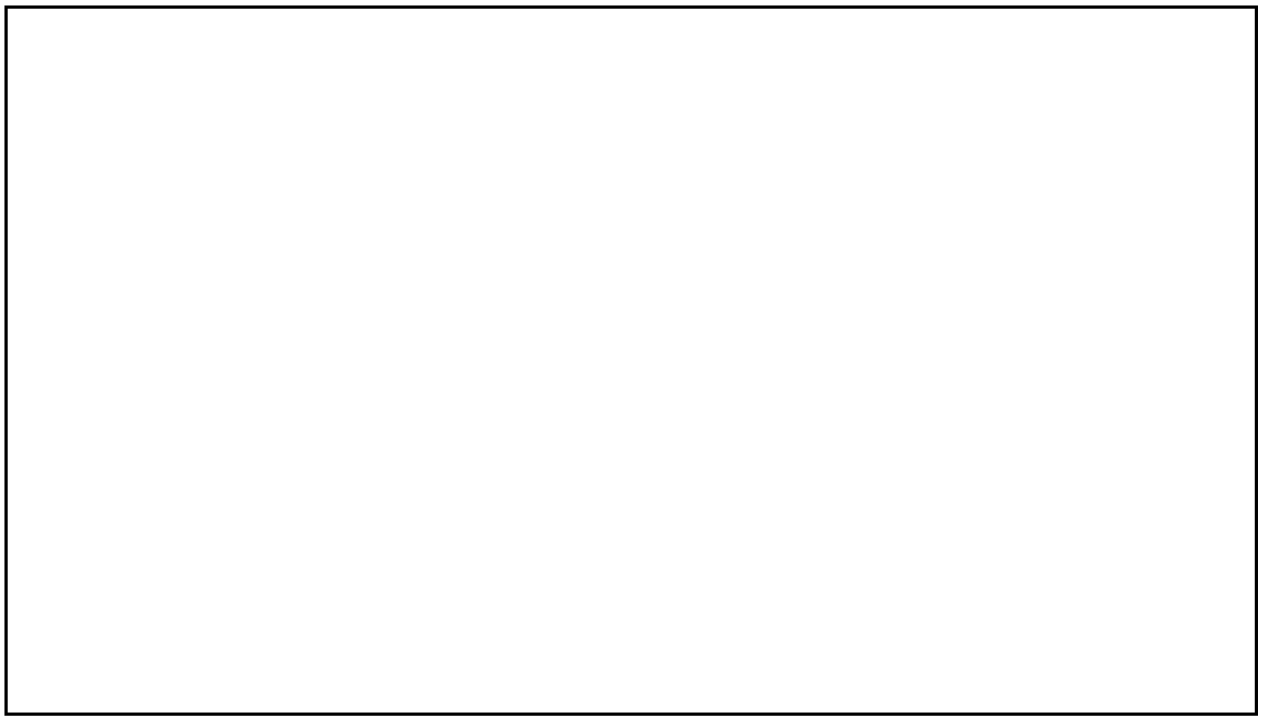
FIG.4. SIX SELF-SUPPORTING LATTICE TOWERS AT BRATOVSHCHINA RADIO STATION (1957)

[redacted]

25X1

PIC/JR-8/59

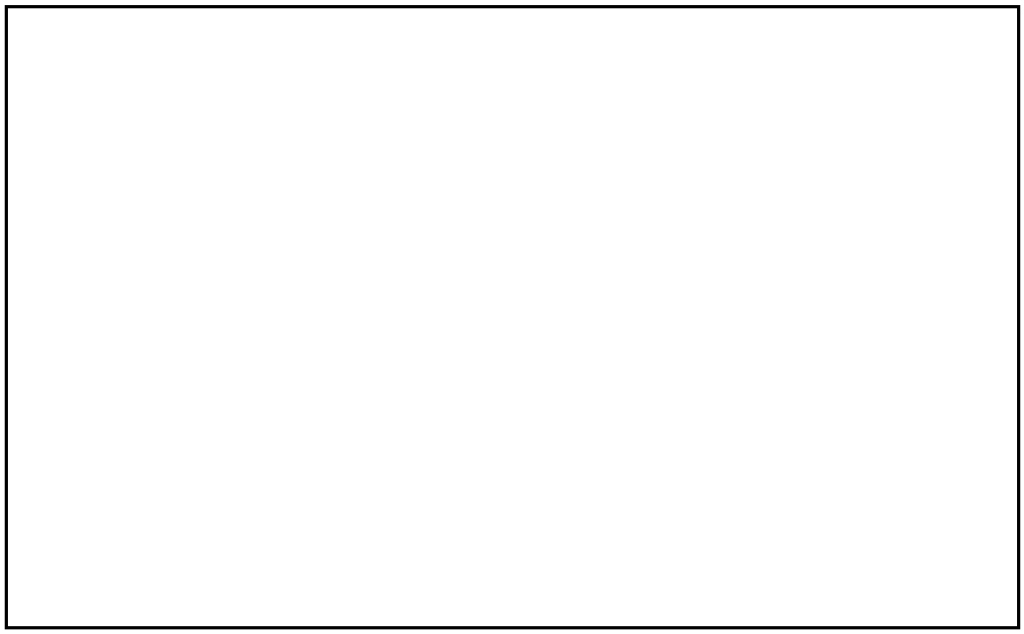
25X1



25X1

MAP DATA: ATMP [redacted]-2-100A (S)

25X1



COORDINATES: 56°05'N/37°57'E
37UDC322124

25X1

25X1

NUMBER 8

NOGINSK RADIO STATION

I. GENERAL

Noginsk Radio Station (No. 8) is located 27 nautical miles (nm) east of Moscow, 3 nm southwest of Noginsk, and just north of the Moscow/ Noginsk highway (Figure 5). This radio station, which is a point-to-point

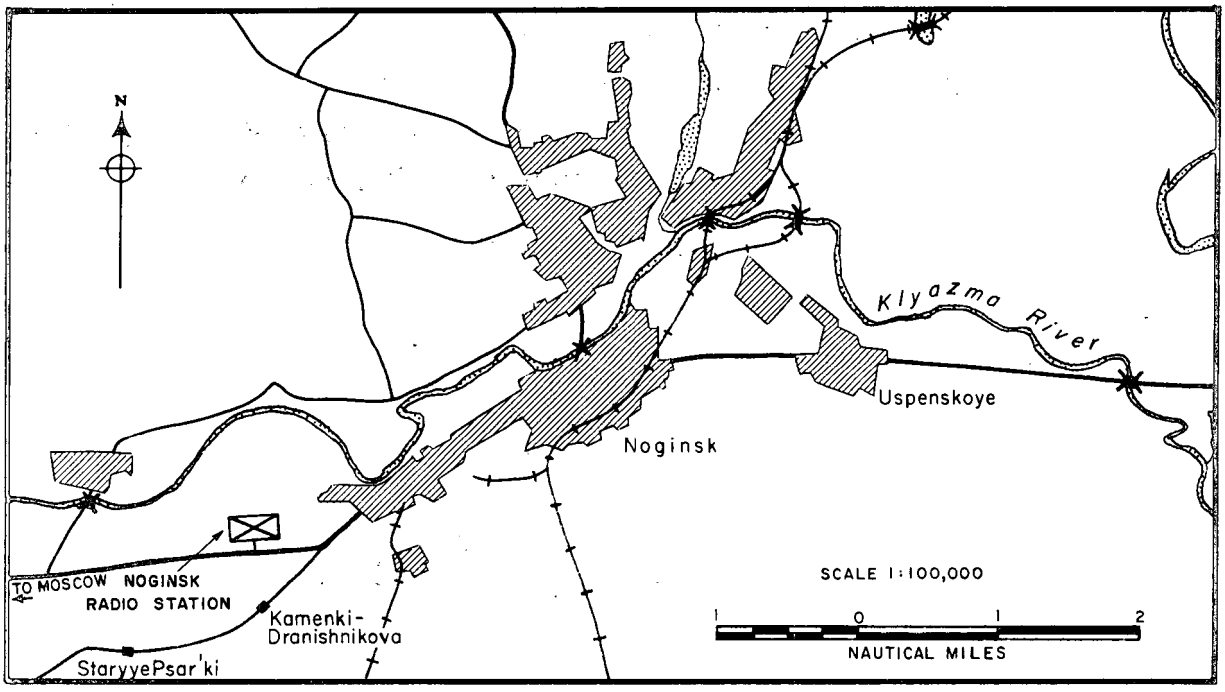


FIG.5. LOCATION MAP

25X1 transmitter station (Figure 6), is partially enclosed by a wire fence and covers approximately 85 acres (2,900 x 1,250 feet). Aerial photography of [redacted] and ground photography of 1948 show this station to include a transmitter building, a cooling pond, two support-type buildings, a guardhouse, 12 antenna towers arranged in 6 pairs, and 5 double-end-pole rhombic antennas.

PIC/JR-8/59

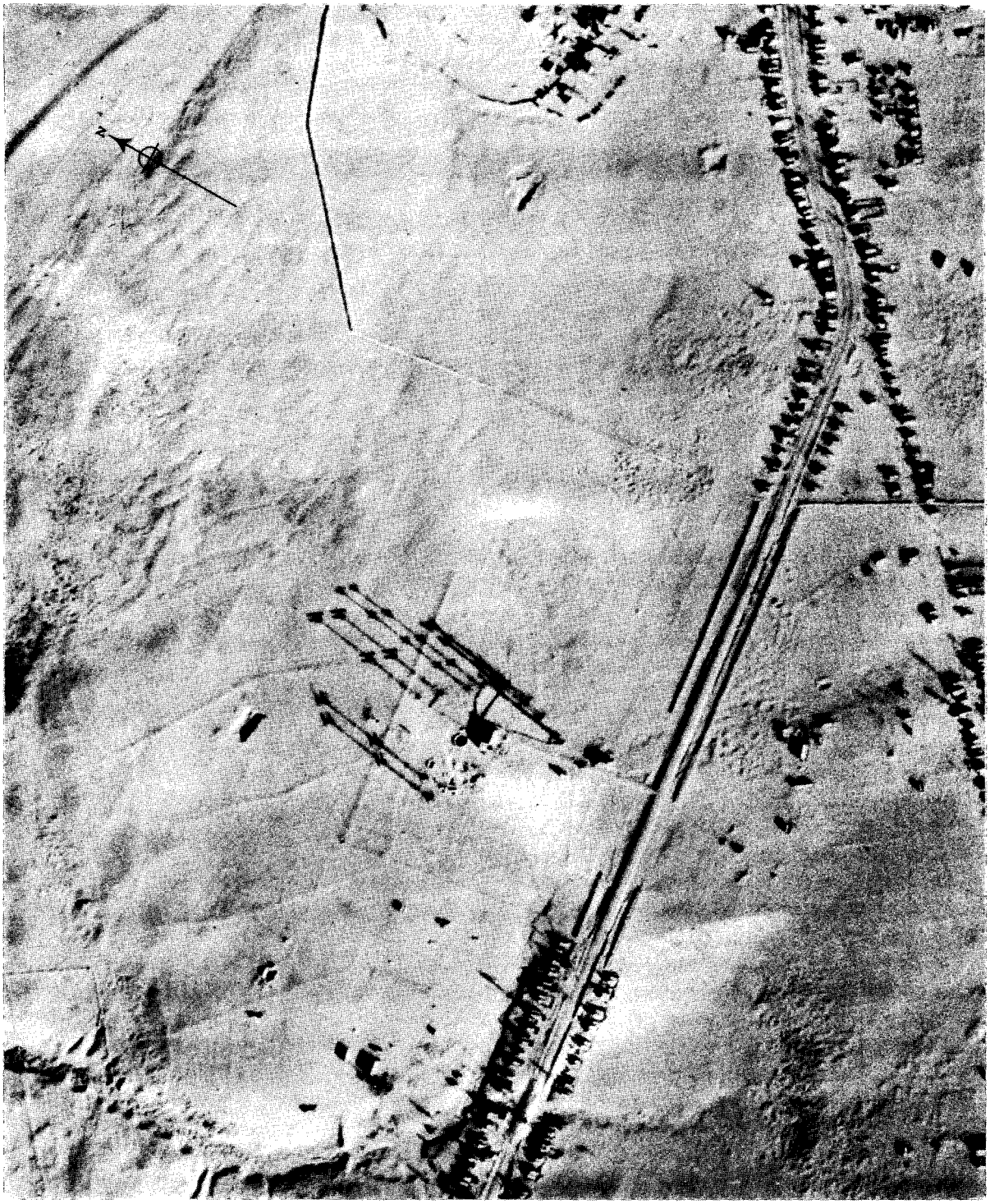


FIG. 6. NOGINSK RADIO STATION (NO. 8) [redacted]

25X1

25X1

II. STRUCTURES

The following is a tabulation of all structures within the station area (item numbers are keyed to Figure 7).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Transmitter building	3	Complex	140 x 100
2	Support-type building	1	Hip	100 x 70
3	Support-type building	1	Gable	45 x 25
4	Guardhouse	1	Shed	[redacted]
5	Cooling pond	-	-	55 dia.

25X1

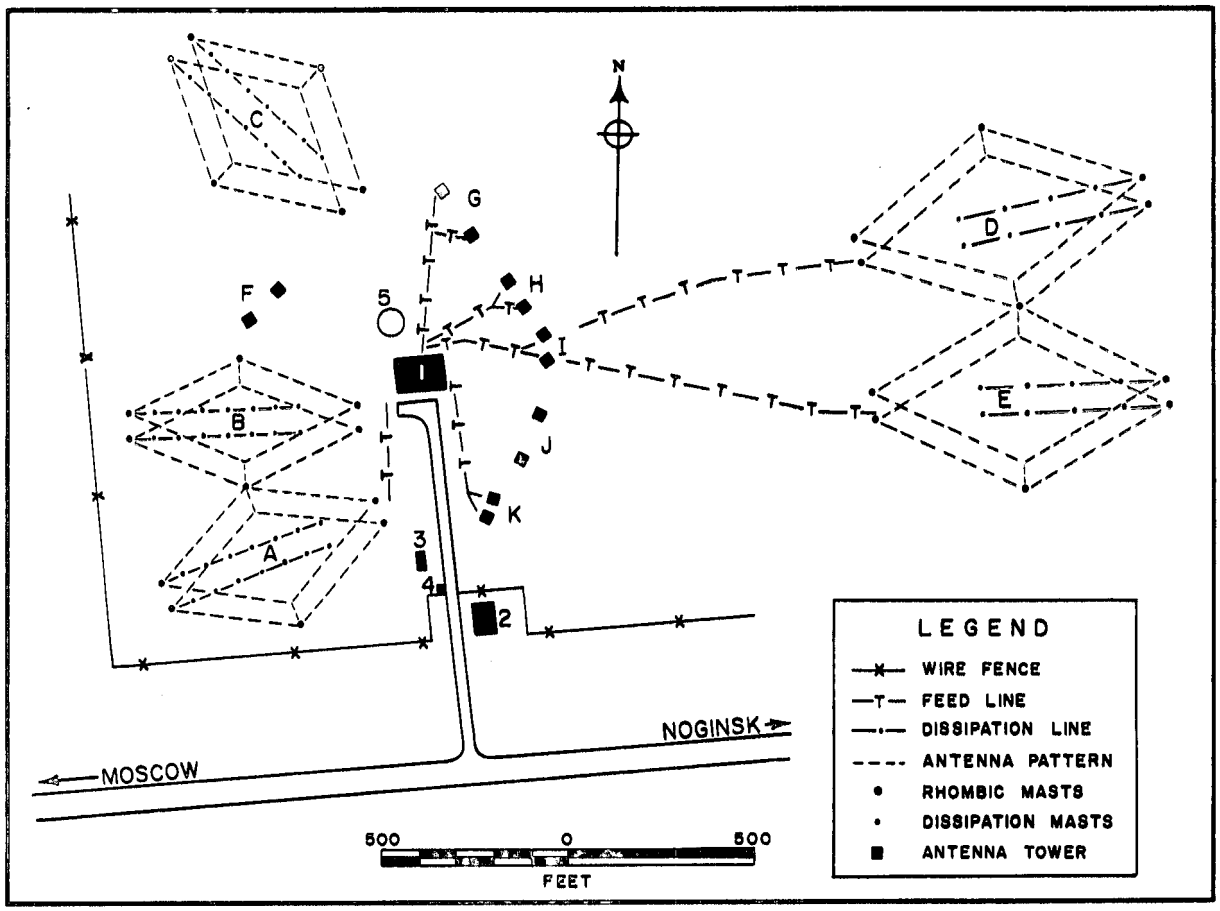


FIG. 7. LINE DRAWING OF NOGINSK RADIO STATION (NO. 8)

25X1

PIC/JR-8/59

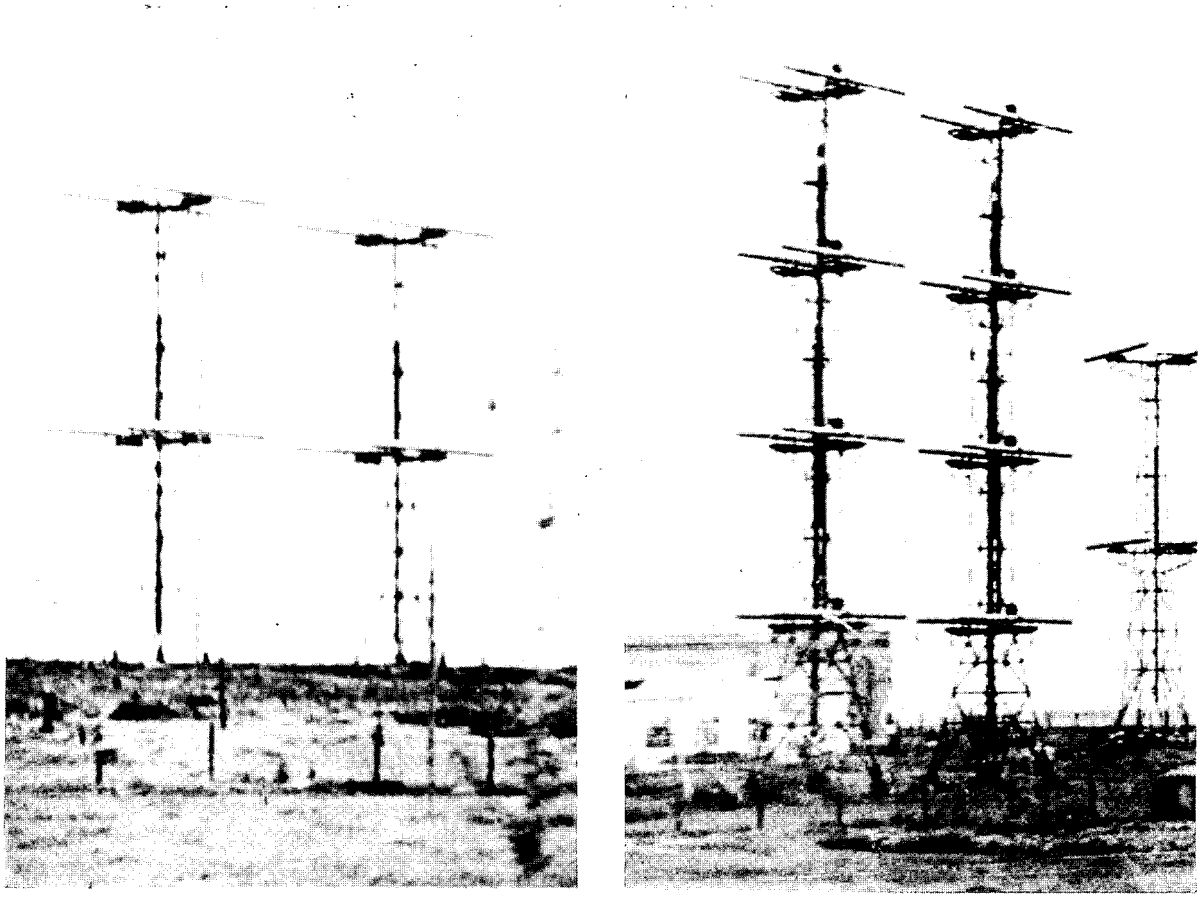


FIG.8. NOGINSK RADIO STATION (NO. 8) (1948)

Two-stacked Parasitic Arrays mounted on self-supporting towers.

Four-stacked Parasitic Arrays mounted on self-supporting lattice towers, control building in background.

III. ANTENNAS

The antenna field appearing on [redacted] photography contains 12 self-supporting steel lattice towers arranged in six pairs (Figure 7, items F-K). The antennas supported by these towers are high-frequency directional horizontal dipoles. Each antenna unit consists of a driver element and a parallel reflector element. These antenna units are stacked on the towers (Figure 8). A feed line extends from the control building and splits near each tower base to center-feed the driver elements. 25X1

The item letters in the following table are keyed to the tower pairs on Figure 7.

Item Letter	Tower Height (feet)	No. of Stacked Units	Unit Heights Above Ground (feet)	Driver Elements Dimensions (feet) Length	Driver Elements Dimensions (feet) Diameter	Reflector Element Dimensions (feet) Length	Reflector Element Dimensions (feet) Diameter	Azimuth Orientation (degrees) *
F	100	2	50, 100			40		
G	100	2	50, 100			40		
H	140	4	35, 70, 105, 140			20		
I	100	4	25, 50, 70, 100			20		
J	100	2	50, 100			40		
K	100	4	25, 50, 75, 100			20		

25X1
25X1
25X1

* Approximate

The dimensions in the above table are taken from NIS 26, Supplement III, Telecommunications, May 1949, page 31 (S).

The distance between the driver elements and reflector elements is as follows: items F, G, and J, 20 feet; and items H, I, and K, 10 feet.

A possible ground screen is attached to the towers in items G and H. There are two possible wave traps connected to the transmitter building.

The antenna field also contains five double-end-pole rhombics for point-to-point communications. Each rhombic in the double rhombic patterns has a dissipation line. The item letters in the following table are keyed to Figure 7.

Item Letter	Mast Height (feet)	Major Axis (feet)	Minor Axis (feet)	Side Length (feet)	Distance Between End Poles (feet)	Computed Tilt Angle (degrees)	Dissipation Line Length (feet)	Azimuth Orientation (degrees)
A	70	610	320		80		460	
B	70	610	270		80		450	
C	70	610	340		80		480	
D	70	780	420		80		500	
E	70	780	420		80		500	

25X1
25X1

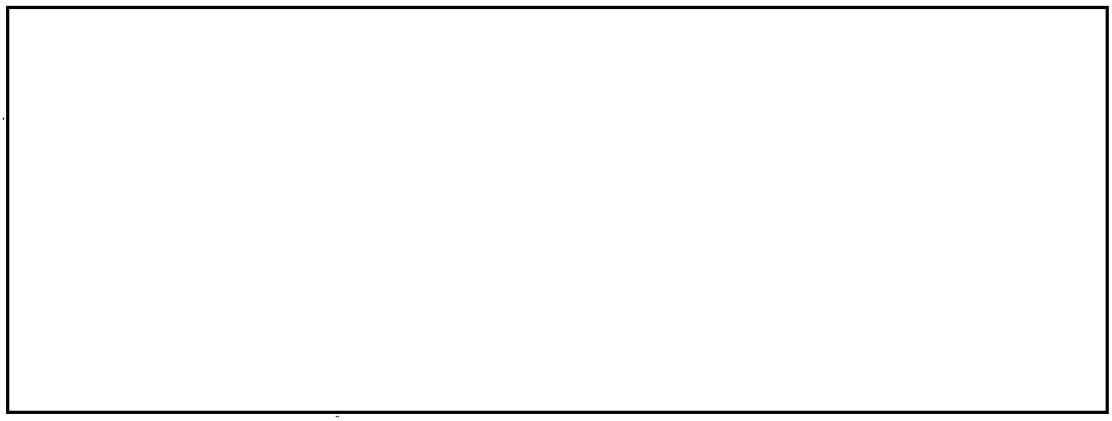
IV. OVERHEAD POWER AND/OR COMMUNICATIONS LINES

A power line with its line of lead in an east/west direction is located 500 feet south of the site. No connection between this line and the area can be determined.

25X1
25X1

PIC/JR-8/59

PHOTO DATA:

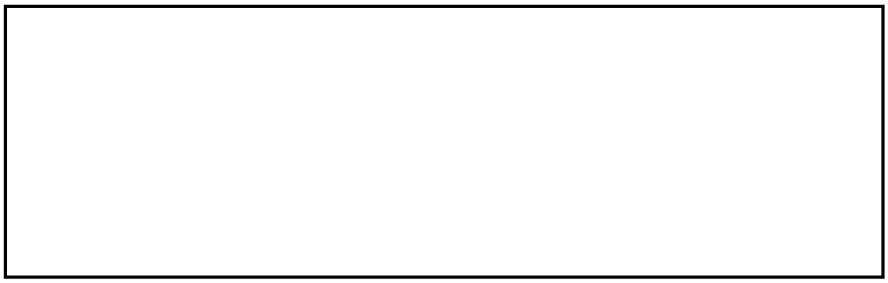


25X1

25X1

MAP DATA: ATMP [redacted] 1-25MA, Item 1-21 (S)
100A (S)

25X1



COORDINATES: 55°50'N/38°22'E
37UDB613882

PIC/JR-8/59

25X1

NUMBER 9

NOGINSK RADIO STATION

I. GENERAL

Noginsk Radio Station (No. 9) is located 27 nautical miles (nm) east of Moscow, 3 nm southwest of Noginsk, and just north of the Moscow/Noginsk highway (Figure 9). This station, which is a local broadcasting station located 5,000 feet west of Noginsk Radio Station (No. 8), is enclosed by a fence and covers approximately 68 acres (2,100 by 1,400 feet). Aerial photography of [redacted] reveals the station to include an operations area with a control building and adjacent cooling pond, a guardhouse, two guyed steel masts, and a support area (Figure 10).

25X1

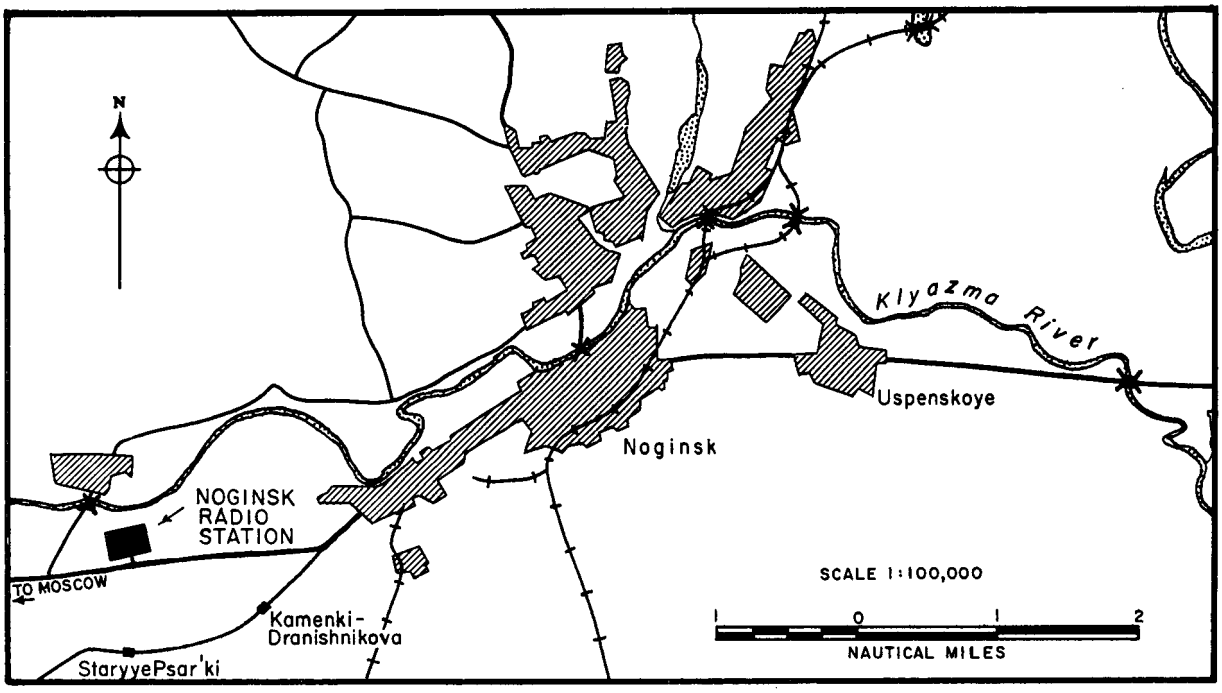


FIG.9. LOCATION MAP

25X1

25X1

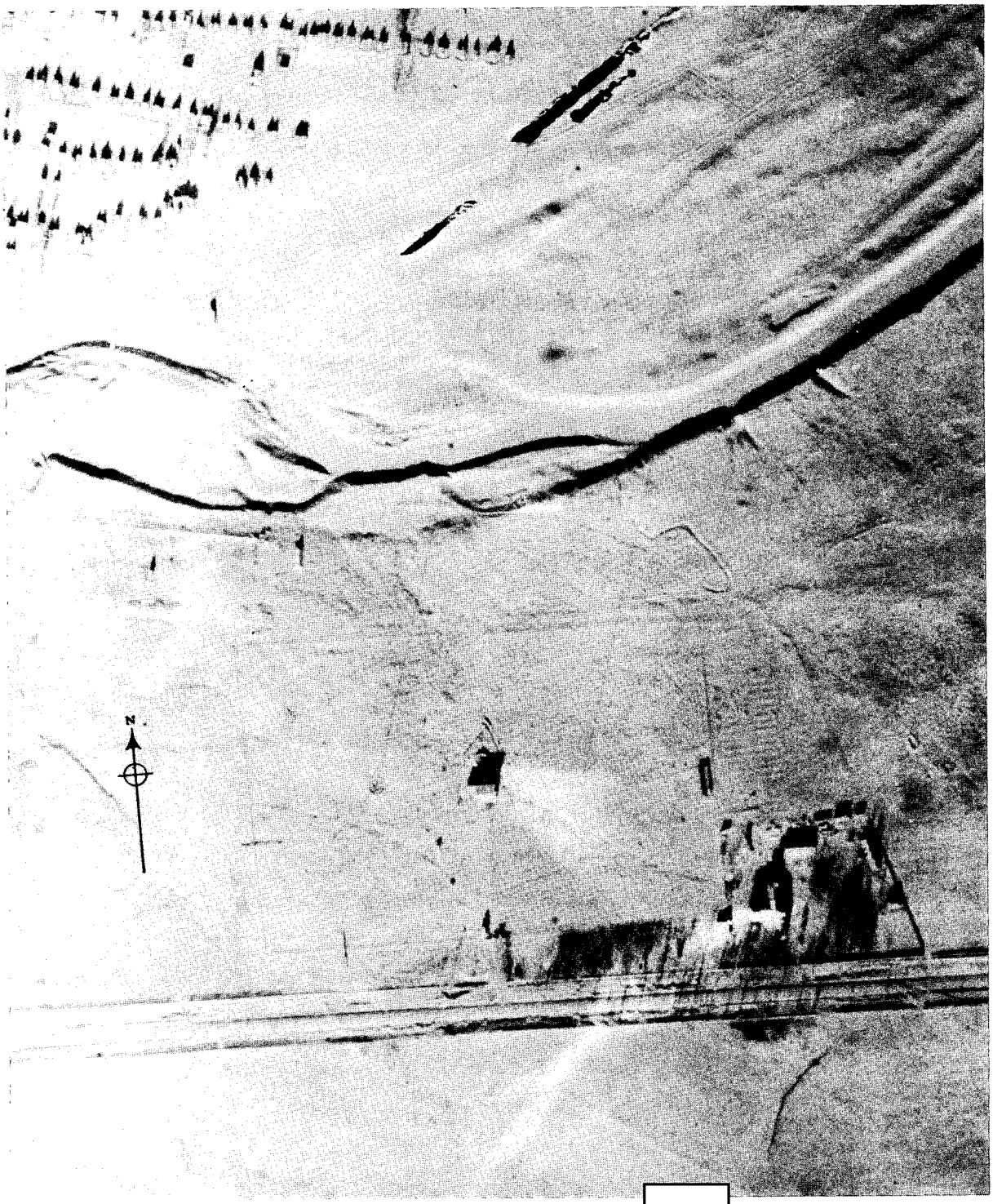


FIG.10. NOGINSK RADIO STATION (NO. 9)

25X1

II. STRUCTURES

The following is a tabulation of the structures within the operations and support areas as of [redacted] (item numbers are keyed to Figure 11).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
Operations Area				
1	Control building	2	Gable & Shed	145 x 90
2	Possible administration bldg.	1	Gable	35 x 15
3	Guardhouse	1	Shed	10 x 10
4	Support-type building	1	Gable	130 x 35
5	Cooling pond	-	-	60 dia.
Support Area				
1	Administrative & barracks bldg.	3	Complex	-
1a	Base	3	-	180 x 70
1b	Wing	3	-	110 x 65
1c	Wing	3	-	110 x 50
2	Unidentified	1	Shed	15 x 15
3	Unidentified	1	-	40 x 25
4	Warehouse-type building	1	-	75 x 20
5	Barracks-type building	2	Gable	150 x 70
6	Warehouse-type building	1	-	60 x 25
7	Warehouse-type building	1	Gable	70 x 25
8	Warehouse-type building	1	Gable	40 x 20
9	Unidentified	1	Shed	15 x 15
10	Warehouse-type building	1	Gable	160 x 40
11	Unidentified	2	Hip	60 x 35

III. ANTENNA

The two steel masts are approximately 330 feet high and 860 feet apart. Each mast is supported by guy wires fastened to four pairs of

anchor bases. Each pair consists of two anchors placed at right angles to and 300 and 500 feet, respectively, from the base of each mast.

IV. OVERHEAD POWER AND/OR COMMUNICATION LINES

A power line which extends in an east/west direction is located

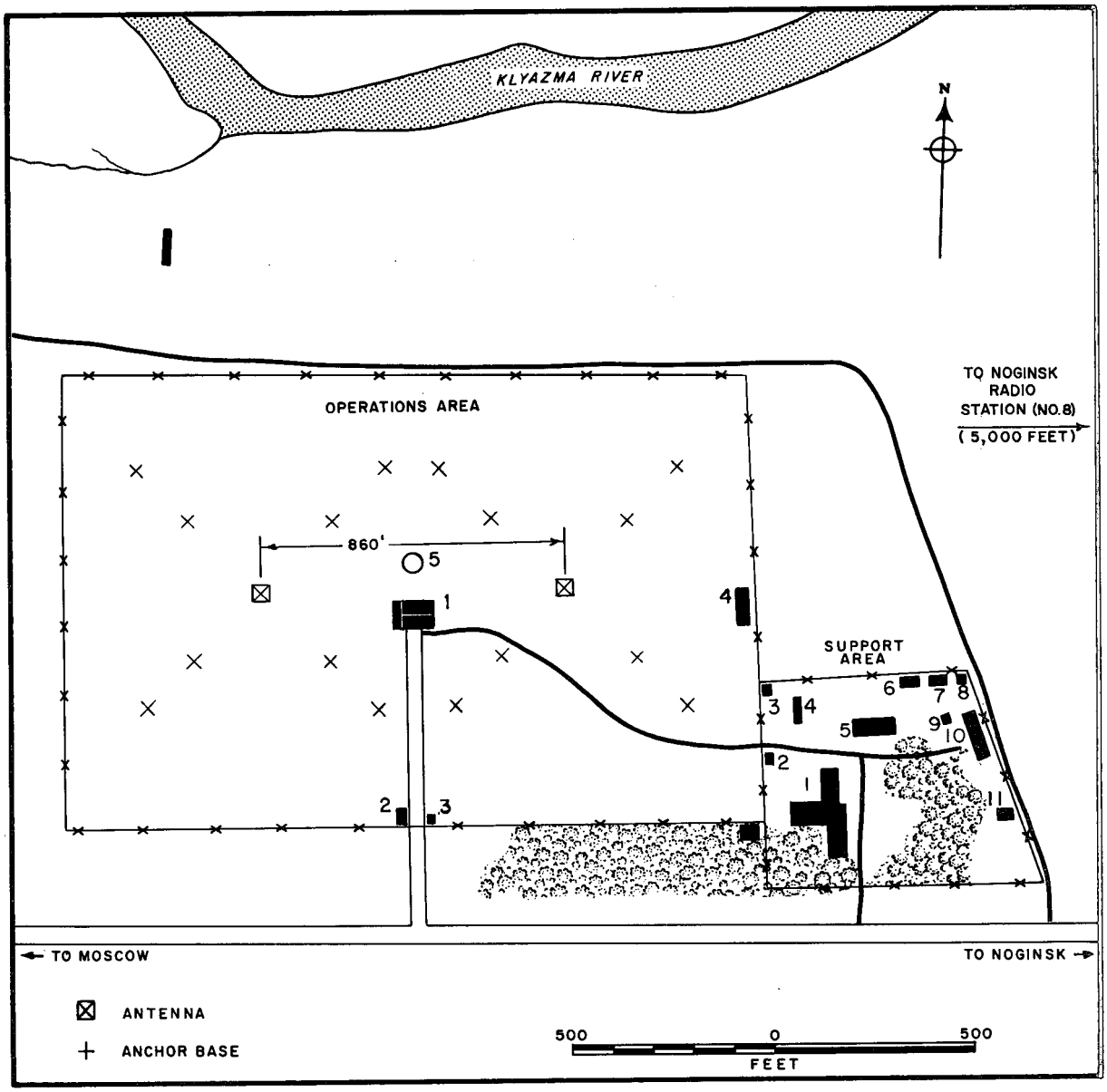
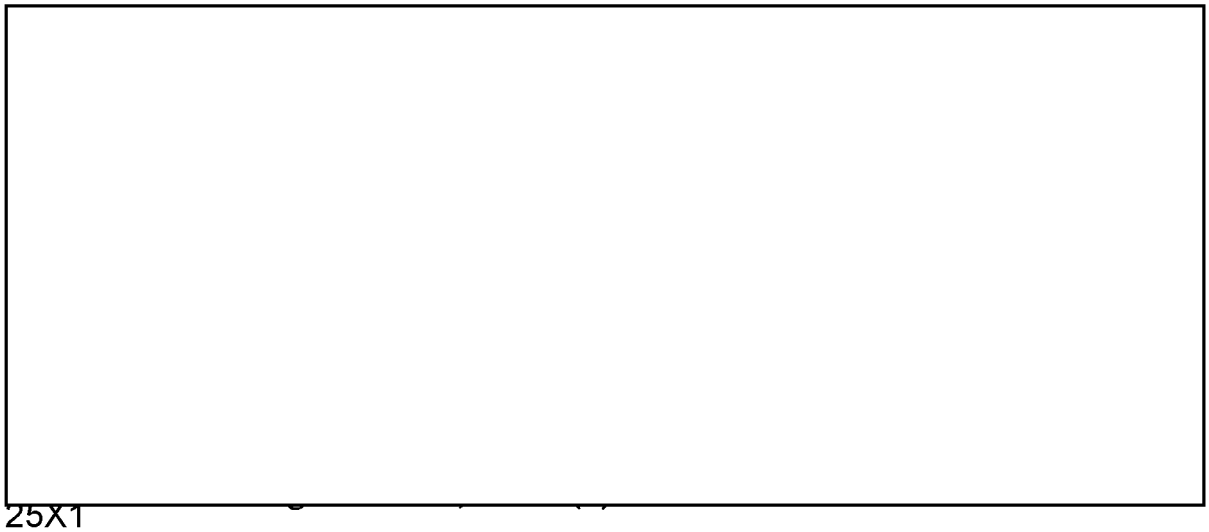


FIG.11. LINE DRAWING OF NOGINSK RADIO STATION (NO. 9)

500 feet south of the station. No connection between this line and the station can be determined. 25X1

25X1



25X1

MAP DATA: ATMP 1-25MA, Item 1-21 (S)
100A (S)

25X1

COORDINATES: 55°50'N/38°21'E
37UDB590881

25X1

NUMBER 10

SHCHELKOVO RADIO STATION

I. GENERAL

Shchelkovo Radio Station is located 17.5 nautical miles (nm) northeast of Moscow, 3 nm southeast of Shchelkovo, and 625 feet east of the Chalkalovskaya Railroad Station (Figure 12). It is served by an all-weather road, is enclosed by a fence, and covers approximately 40 acres (1,400 by 1,200 feet). Aerial photography of [redacted] shows the station to consist of an operations area with a transmitter building and two short guyed masts, and a support area. Also visible are three bases for lattice masts, four excavations for stick masts, and numerous guy-wire anchors (Figure 13). These bases and guy-wire anchors indicate the prior existence of two tall guyed

25X1

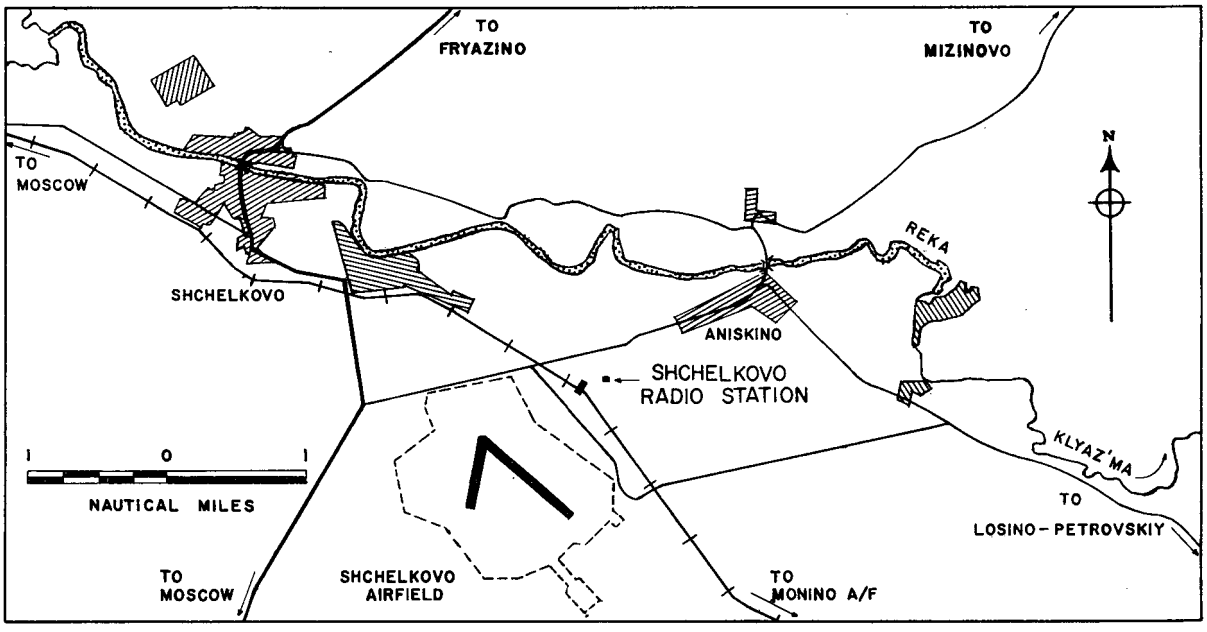


FIG. 12. LOCATION MAP

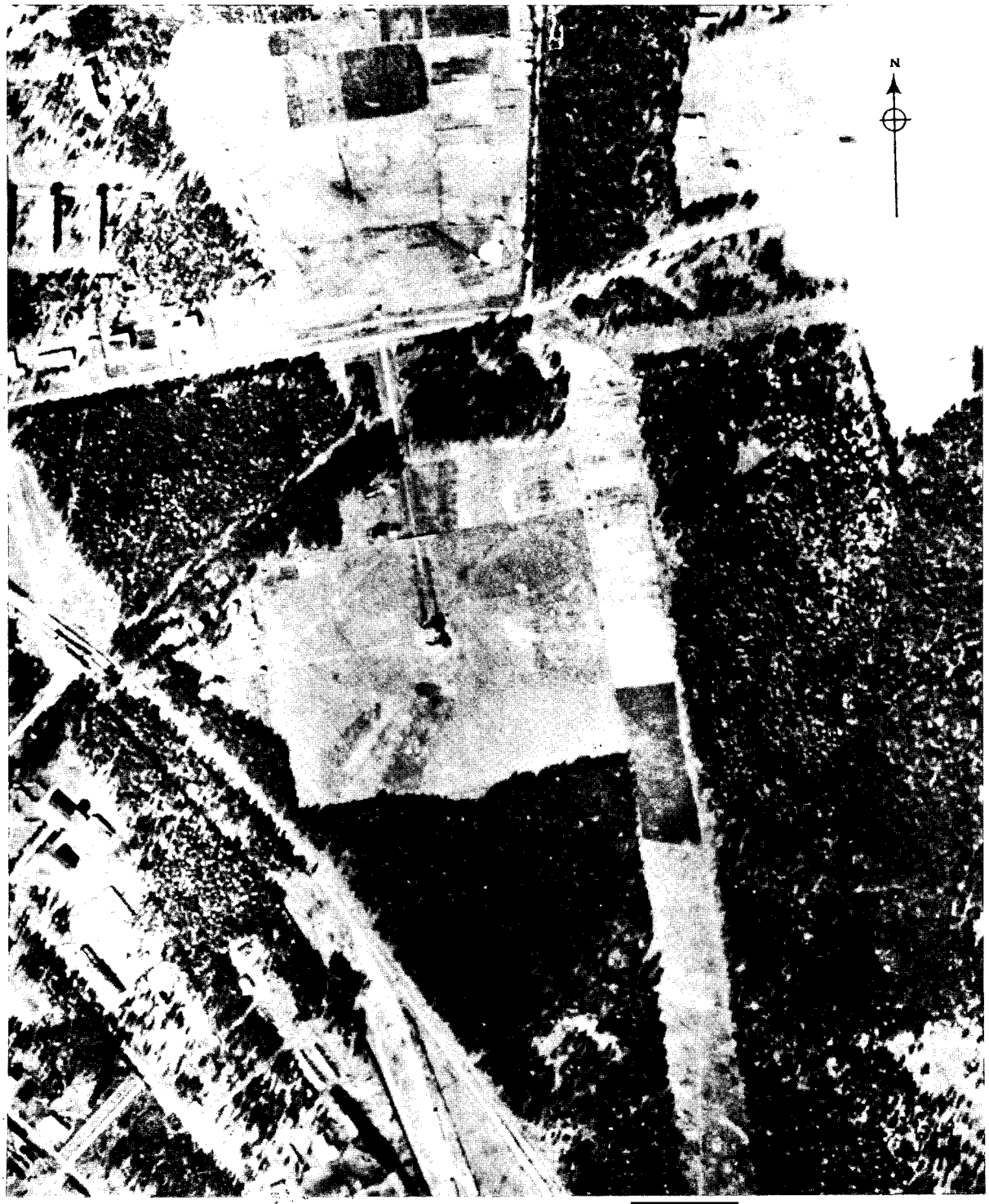


FIG.13. SHCHEL'KOVO RADIO STATION

lattice masts, possible vertical radiators, and of a mast similar to the two guyed masts present as of [redacted] The four excavations indicate the prior existence of a rhombic antenna. This station is reported to have begun [redacted] 25X1

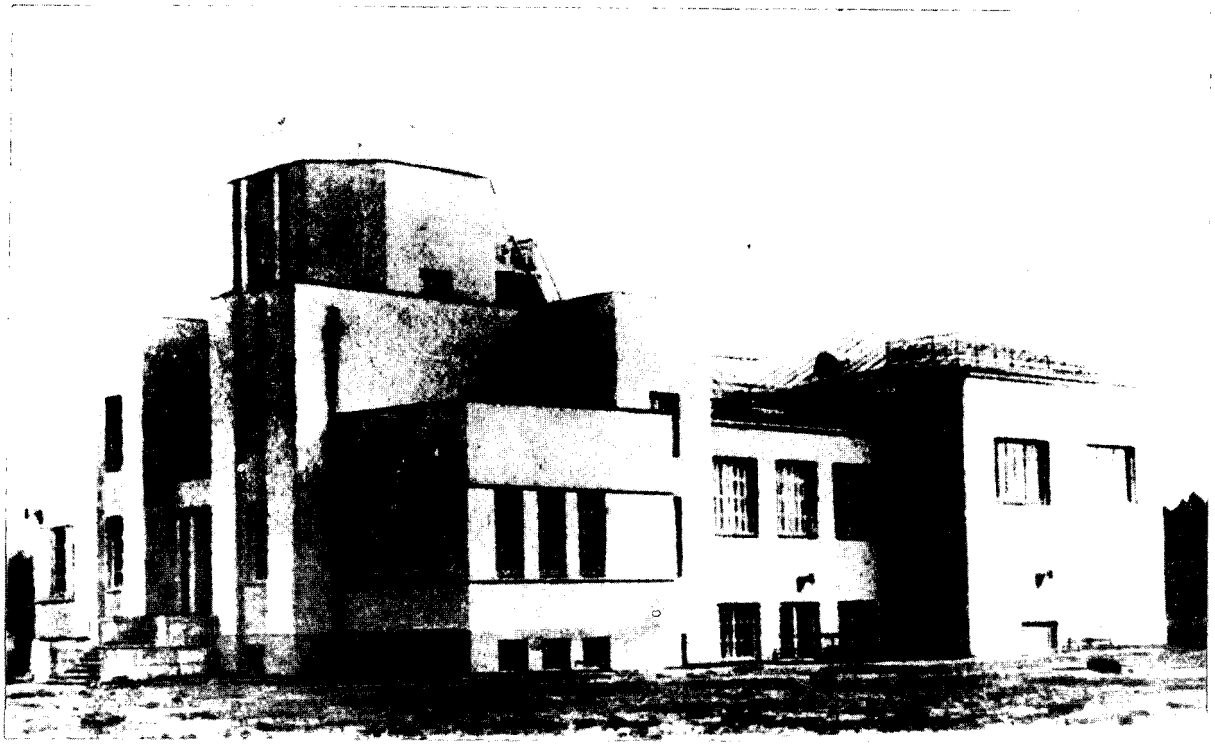


FIG.14. TRANSMITTER BUILDING AT SHCHELKOVO RADIO STATION (1931)

II. STRUCTURES

The transmitter building, the only structure within the fenced operations area, is a complex-type building with over-all dimensions of approximately 120 by 80 feet (Figure 14). The following is a tabulation of the structures within the support area as of [redacted] tem numbers are keyed to Figure 15). 25X1

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Barracks	2 or 3	Hip	110 x 45
2	Barracks	2 or 3	Hip	110 x 45
3	Barracks	2 or 3	Hip	110 x 45
4	Unidentifi ed	-	-	45 x 30
5	Unidentified	-	-	35 x 25
6	Unidentified	1	-	45 x 30
7	Unidentified	1	-	30 x 25
8	Warehouse-type building	1	Gable	70 x 35
9	Warehouse-type building	1	Gable	50 x 30
10	Unidentified	1	-	25 x 15
11	Unidentified	1	-	15 x 15
12	Guardhouse	1	-	15 x 15

III. ANTENNAS 25X1

The two short guyed masts appearing on [redacted] aerial photography are approximately 65 feet high and approximately 500 feet apart. The two tall guyed lattice masts, which had been removed, were spaced 825 feet apart and were supported by four pairs of guy-wire anchors. Each pair consisted of two anchors placed at right angles to and 165 and 330 feet, respectively, from the base of each mast. The four excavations and the guy-wire anchors which formed the rhombic antenna indicate that this antenna had a
25X1 side length of 350 feet, a minor axis of 295 feet, a major axis of 630 feet, and an azimuth orientation of [redacted] degrees (Figure 15).

[redacted]

IV. POWER AND/OR COMMUNICATION LINES 25X1

Two power lines with their line-of-lead in a north-south direction are

25X1

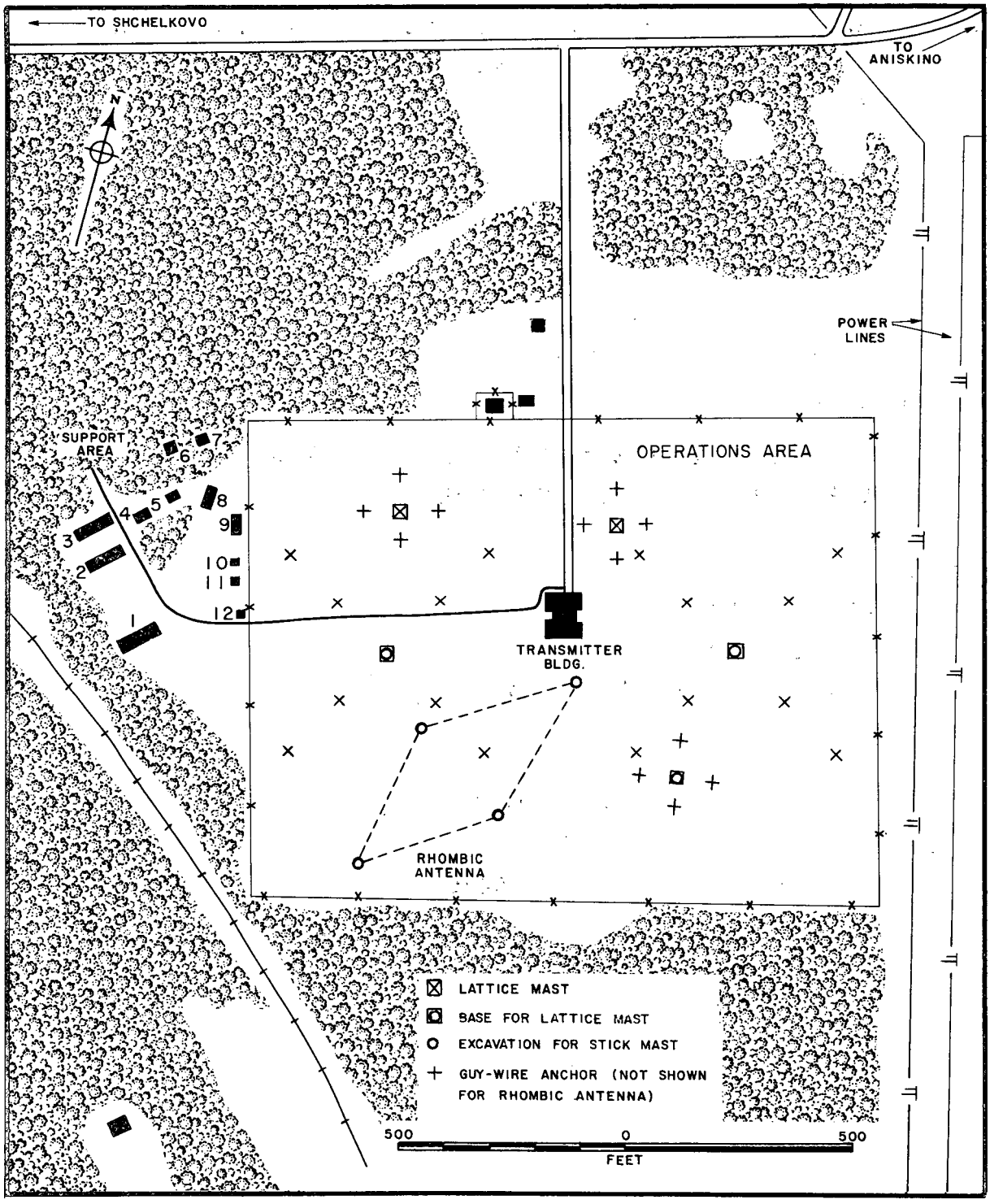


FIG.15. LINE DRAWING OF SHCHELKOVO RADIO STATION

located along the east side of the station. A single pole located in the middle of the eastern fence line indicates that the area is probably supplied with power from this source.

[redacted]

MAP DATA:

25X1 ATMP [redacted] 2-100 (S) 25X1
8-25MA, Item 8-17 (S)
9-25MA, Item 9-1 (S)

25X1 [redacted]

COORDINATES: 55°54'N/38°04'E
37UDB422953

25X1

PIC/JR-8/59

NUMBER 14

RADIO STATION NEAR MYTISHCHI

25X1

A radio station is reported to be located on the grounds of the Moscow Military Communications Institute just northwest of the town of Mytishchi (Figure 16). Mytishchi is 11.5 nautical miles northeast of Moscow. This station is reported to be located in the north part of the institute grounds and [redacted] aerial photography reveals six various-sized buildings surrounded by a wall in this area (Figures 17 and 18). There are no masts or antennas visible on the aerial photography. Ground photography of 1957-1958 reveals numerous guyed stick masts located on the northwest side of the

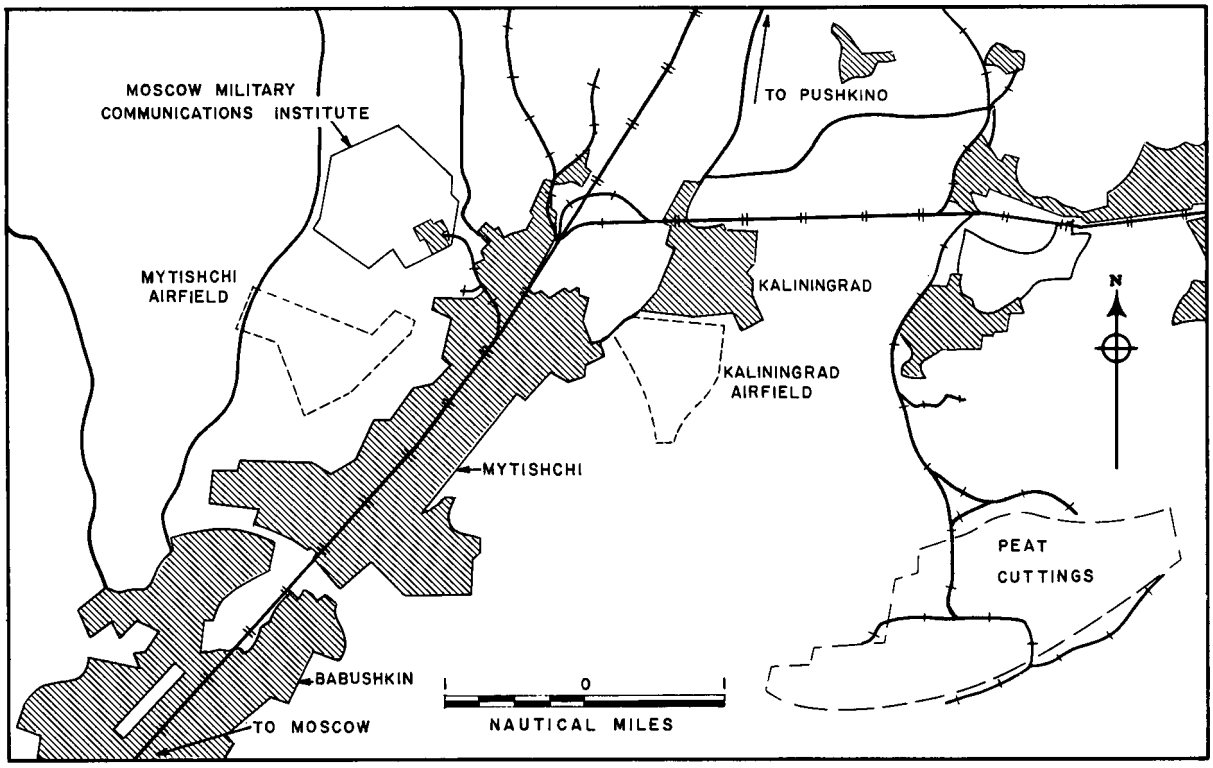


FIG. 16. LOCATION MAP

FIG. 17. MOSCOW MILITARY COMMUNICATIONS INSTITUTE [redacted]

25X1

grounds. Although no antenna pattern can be identified on the ground photography the area is reported to contain 21 stick masts each 50-60 feet high arranged in a 5-4-5-4-3 pattern oriented NW/SE. Also visible are several microwave parabolas mounted on steel masts, two Knife Rest radars, a parabola-shaped probable radar, and a self-supporting lattice tower with platforms and a large dish-shaped antenna mounted on one side (Fig 19).

The institute has been reported to be the most important Soviet Army Communications Research Institute and to conduct research on radar, telephone, and other equipment. The institute area is both road and rail-served and reportedly contains 60 administrative and storage-type buildings.

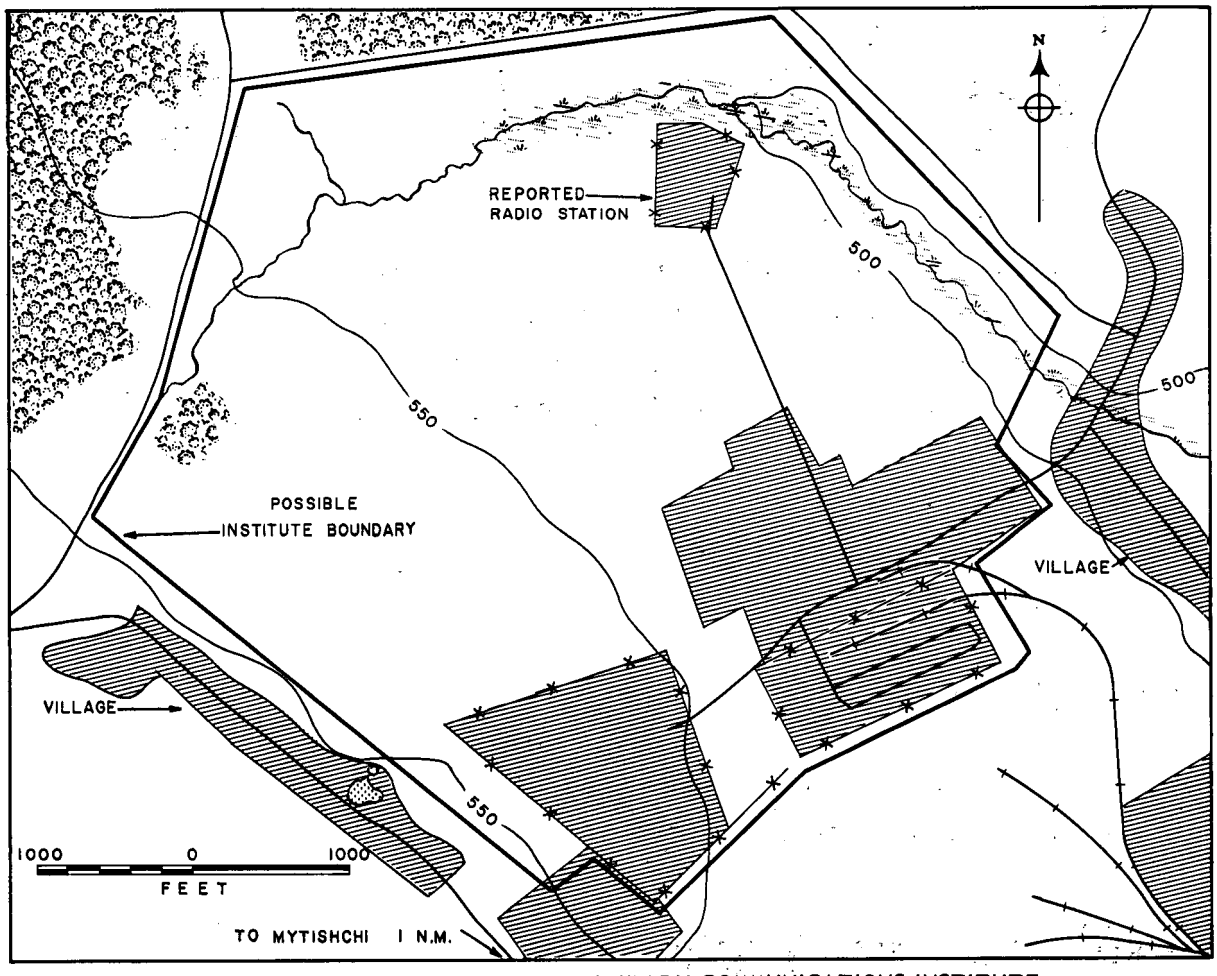


FIG. 18. LINE DRAWING OF MOSCOW MILITARY COMMUNICATIONS INSTITUTE

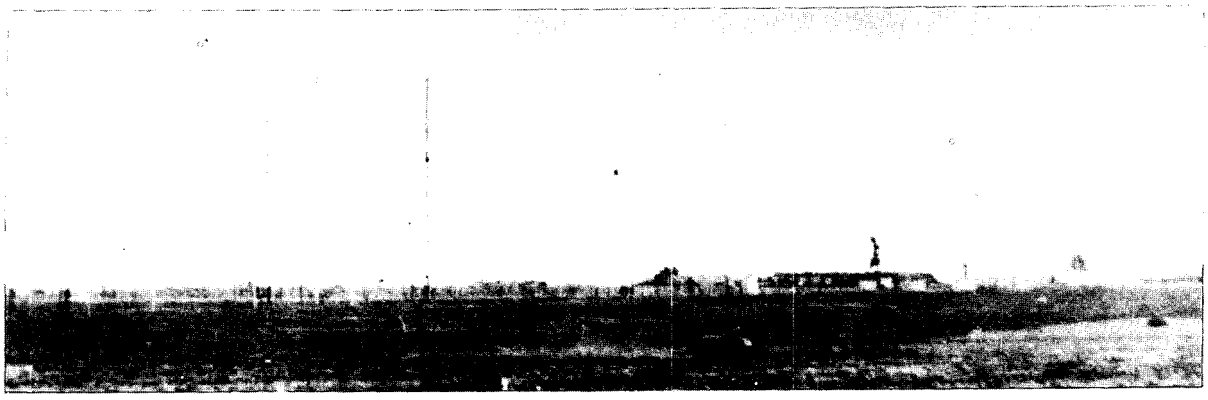


FIG. 19, MOSCOW MILITARY COMMUNICATIONS INSTITUTE Sixteen stick masts can be seen (1956)

25X1

25X1

MAP DATA:

ATMP -2-100 (S)
-7-25 MA (S)

25X1

COORDINATES: 55°56'N/37°44'E
37UDB218977

NUMBER 15

BELYANINOVO RADIO STATION

Belyaninovo Radio Station is located 12 nautical miles (nm) north of Moscow and one nm southeast of the village of Belyaninovo (Figures 20 and 21). Aerial photography of [redacted] shows this station to be served by a 25X1
gravel road and to be at least partially secured by a board fence. The station consists of a small radio facility, reported in 1952-53 to contain from two to four stick masts with horizontal dipoles (Figure 23), item A), and

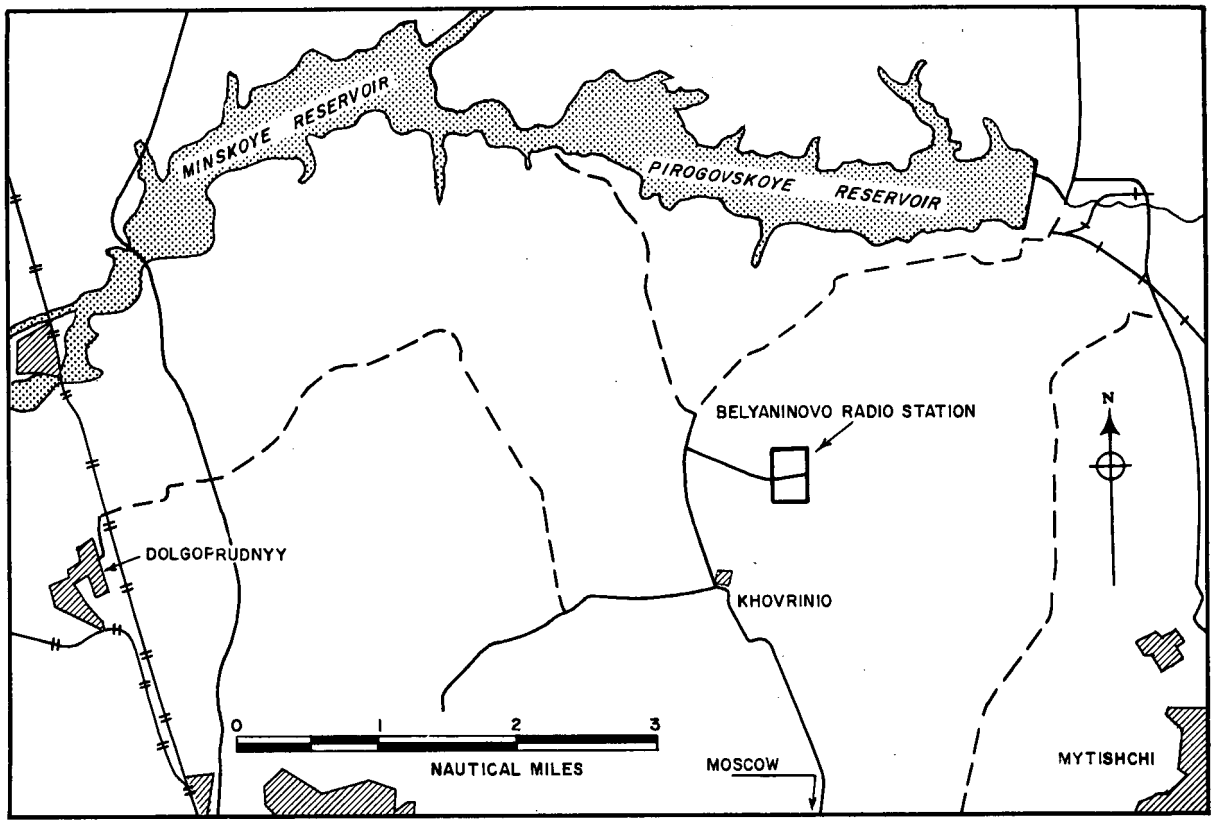


FIG. 20. LOCATION MAP

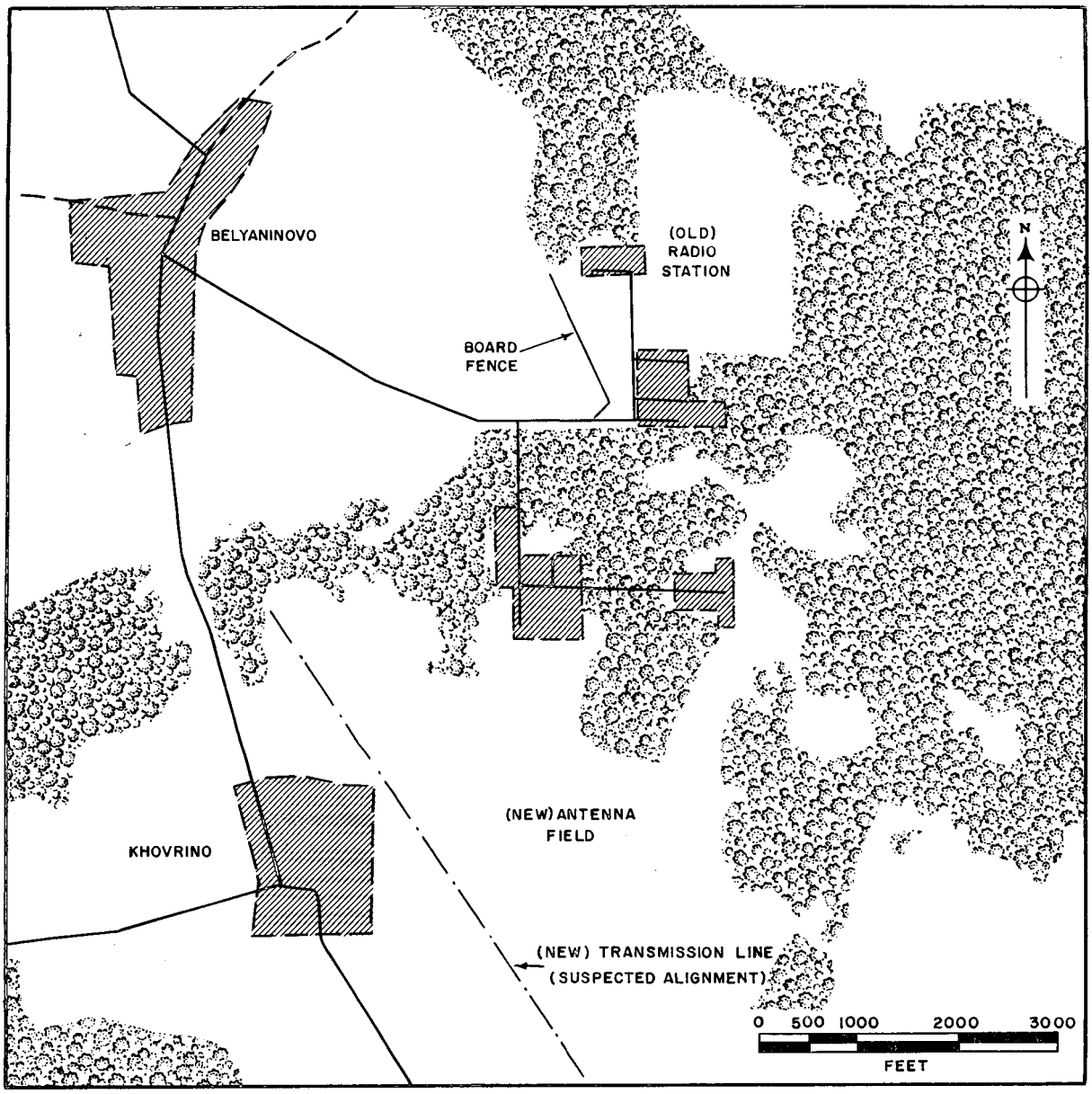


FIG. 21. BELYANINOVO RADIO STATION

another radio facility which contains probable rhombic-type antennas (Figure 23, items B-E), as evidenced by forest clearings. Ground photography of 1956 shows that this new radio facility had been expanded since [redacted] to include a cleared area to the south which contains at least 25 stick masts (Figure 23, item F). The estimated alignment of a power

25X1

FIG. 22. BELYANINOVO RADIO STATION

25X1

PIC/JR-8/59 25X1

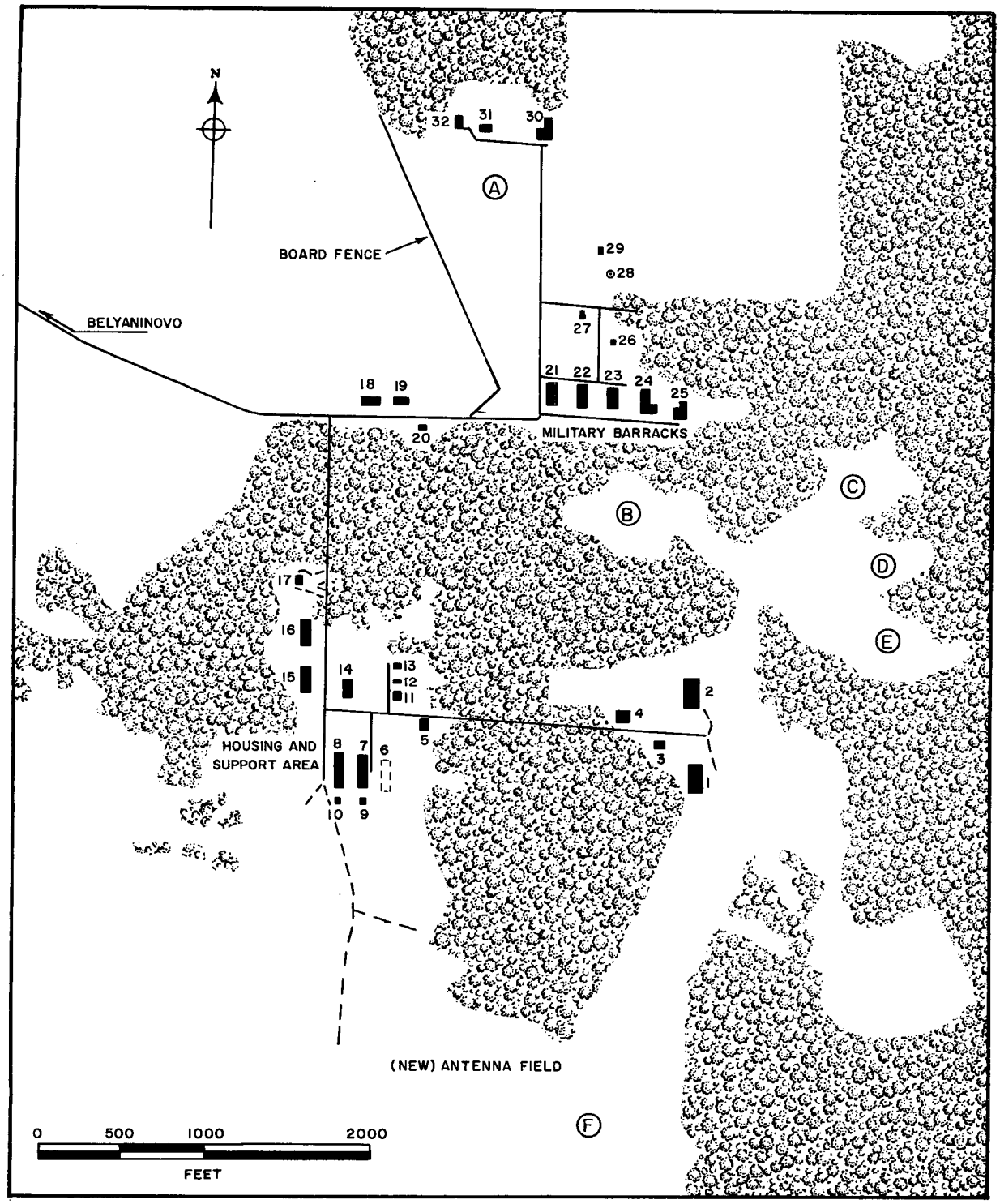


FIG. 23. LINE DRAWING OF BELYANINOVO RADIO STATION

25X1

transmission line, also appearing on 1956 ground photography, is shown on Figure 21. No connection between the power line and the radio station can be determined. [redacted] 25X1

[redacted] 25X1

II. STRUCTURES

25X1 The following is a tabulation of the structures within the station area as of [redacted] (item numbers are keyed to Figure 23).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Possible control building	3	-	160 x 50
2	Possible control building	3	-	160 x 50
3	Support building	2	-	70 x 40
4	Support building	1	-	60 x 35
5	Support building	1	Hip	70 x 40
6	Possible apartment building	U/C	-	180 x 45
7	Possible apartment building	2	Gable	180 x 45
8	Possible apartment building	2	Gable	180 x 45
9	Support building	1	Shed	30 x 20
10	Support building	1	Shed	30 x 20
11	Support building	1	Gable	45 x 35
12	Support building	1	Gable	40 x 20
13	Support building	1	Gable	40 x 20
14	Support building	1	Hip	100 x 45
15	Possible apartment building	1	Gable	160 x 45
16	Possible apartment building	1	Gable	160 x 45
17	Support building	1	Hip	45 x 35
18	Barracks-type building	1	Gable	120 x 45
19	Barracks-type building	1	Gable	100 x 45
20	Support building	1	Gable	40 x 20

Item No.	Identification		Stories	Roof Type	Dimensions (feet)
21	Barracks-type building		2	Hip	120 x 45
22	Barracks-type building		2	Hip	110 x 40
23	Barracks-type building		2	Hip	110 x45
24	Administrative-type building (L-shaped)	(main) (wing)	1	Gable	140 x 40 40 x 40
25	Support building (L-shaped)	(main) (wing)	1	-	70 x 40 40 x 20
26	Support building		1	Gable	40 x 20
27	Support building		1	Hip	70 x 30
28	Standpipe		-	-	20 dia, poss 65 high
29	Possible pumphouse		1	Gable	30 x 20
30	Possible control building (L-shaped)	(main) (wing)	3	Hip	90 x 40 70 x 20
31	Support building		2	Gable	60 x 30
32	Support building		1	Gable	60 x 25

25X1 III. ANTENNAS

Aerial photography of [redacted] reveals four clearings in the woods which are located near the possible control buildings. The shape and location of these clearings indicate the existence of probable rhombic antennas. Other antennas include at least 25 stick masts identified on 1956 ground photography. The following is a list of these antennas (letter designations are keyed to Figure 23).

Item Letter	Configuration	Clearing Dimensions (feet) Major Axis	Minor Axis	Approx. Azimuth Orientation (degrees)
B	Prob. rhombic	800	300	[redacted]
C	Prob. rhombic	800	300	
D	Prob. rhombic	800	300	
E	Prob. rhombic	800	300	

25X1

PIC/JR-8/59

Item Letter	Configuration	Masts	Height of Mast (feet)
A	Horizontal dipoles	2-4	[redacted]
F	Unknown	At least 25	-

IV. OVERHEAD POWER AND/OR COMMUNICATION LINES

No visible power lines supporting the installation appear on [redacted] photography. A power line appearing on 1956 ground photography leads past the southwest corner of the installation, but it cannot be determined whether this line supports the installation.

25X1

[redacted]

25X1

25X1 MAP DATA:

ATMP [redacted]
-1-100 (S)
-2-100 (S)
-6-25 MA (S)

AMS Series N 501 Sheet No. NN 37-1

25X1

[redacted]

COORDINATES: 55°56'N/37°40'E
37UDB168988

NUMBER 30

KUPAVNA ANTENNA FARM

I. GENERAL

Kupavna Antenna Farm is located 17 nautical miles east of Moscow and just south of the Moscow/Gorky rail line (Figure 24). This farm, which reportedly extends along the rail line in the vicinity of Kupavna,

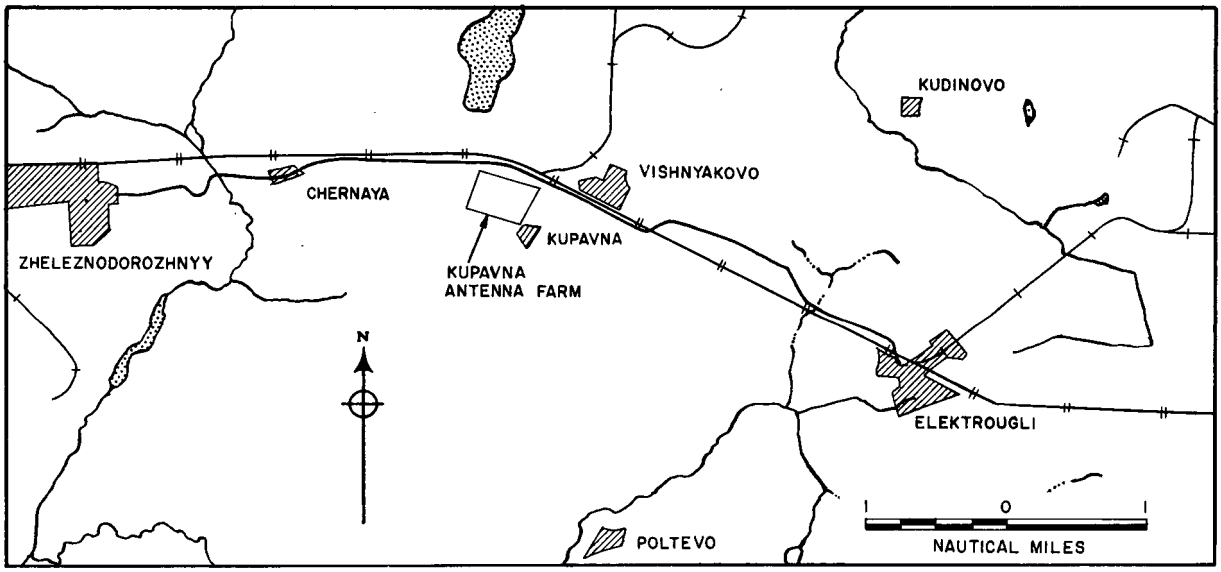


FIG. 24. LOCATION MAP

25X1

cannot be identified on [redacted] aerial photography and probably did not exist at that time. Ground photography of 1955-56 shows this farm to include one control building, a support-type building, three guyed steel towers, and numerous stick masts.

II. STRUCTURES

Ground photography of 1955 shows two structures, the largest of which is the control building, reported to be 200 by 75 feet. This building,

possibly T-shaped, varies from two to three stories in height. The two-story section, which is the major portion of the building, has approximately eight air vents on the roof. The support-type building is a single-story structure located adjacent to the control building (Figure 25).

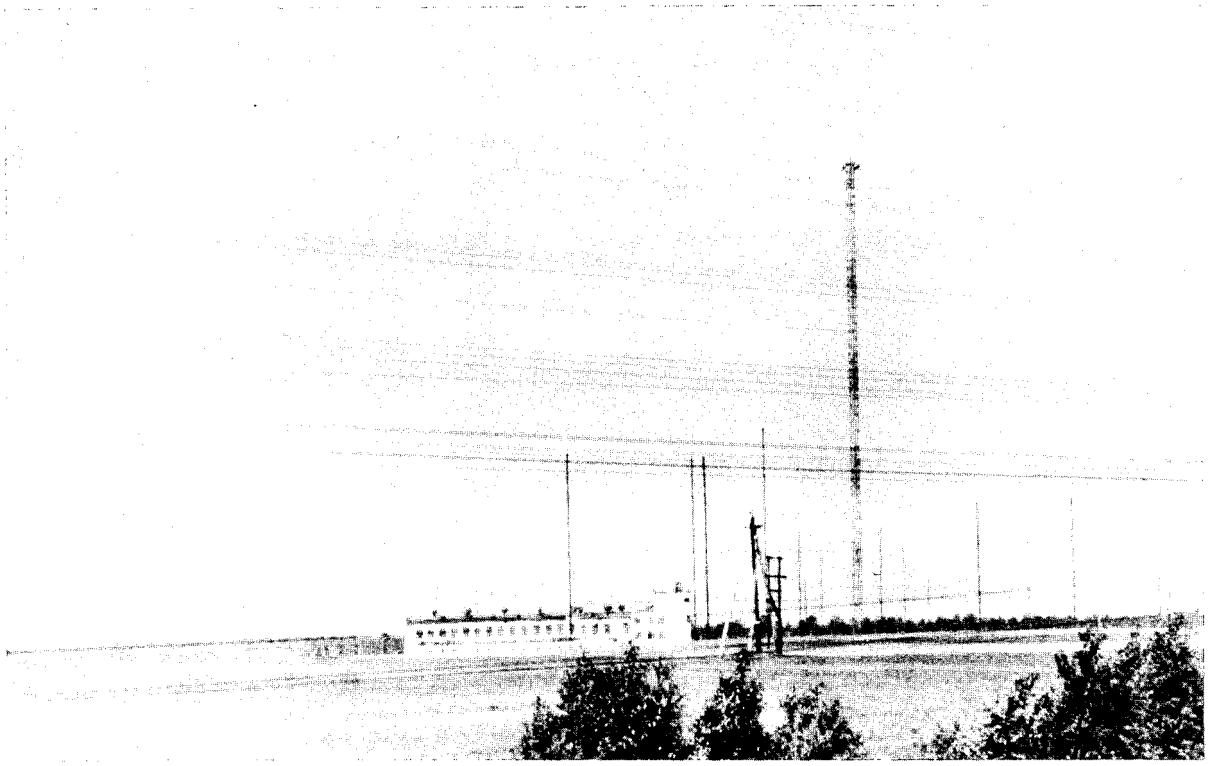


FIG. 25. KUPAVNA ANTENNA FARM View of the control building, one guyed steel lattice mast, and 40 stick masts (1955).

III. ANTENNAS

Ground photography of 1955 shows that the farm contains three tall sectional guyed steel lattice masts oriented in a straight line and reported to be 250 to 350 feet high (Figure 26). Crossarms are positioned at the top of each mast to support probable horizontal dipole antennas. Spreaders are noted between the horizontal wires. There are also over 50 stick masts in the area. The apparent arrangement of some of these masts indicates the presence of possible rhombic antennas. There are reported to be four ladder-type steel masts within the area, but they cannot be identified on the ground photography.

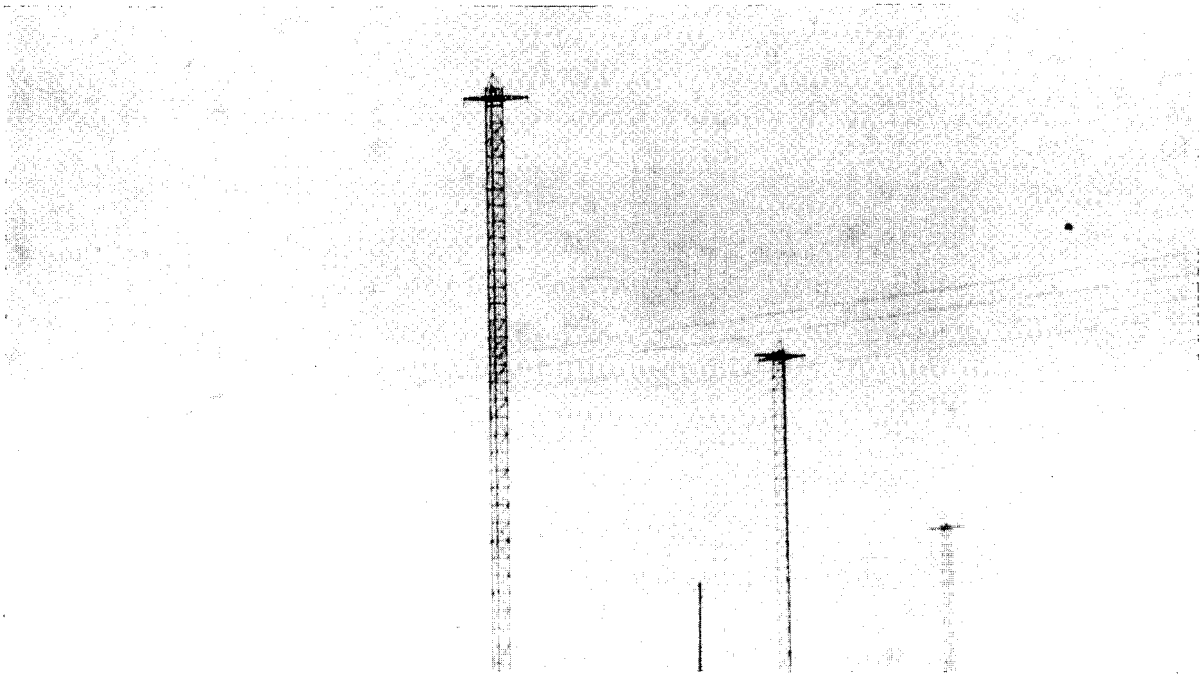


FIG. 26. KUPAVNA ANTENNA FARM View of three guyed steel towers (1955).

IV. OVERHEAD POWER AND/OR COMMUNICATIONS LINES

Ground photography shows a multiwire telephone or telegraph line and a power line. No connection between the site and these facilities is visible, but one probably exists.

25X1

25X1

PIC/JR-8/59

25X1 25X1

MAP DATA:

ATMP [redacted] 3-100 (S)

[redacted]

COORDINATES: 55°45'N/38°06'E

37UDB455785

PIC/JR-8/59

25X1

NUMBER 31

ELEKTROSTAL RADIO STATION

I. GENERAL

Elektrostal Radio Station is located 26 nautical miles (nm) east of Moscow, 4.75 nm south of Noginsk, and 1.3 nm west of Elektrostal (Figure 27). The station, which covers approximately 225 acres (3,800 by 2,600 feet), is enclosed by a fence and served by an all-weather road. Aerial photography of [redacted] shows the station to consist primarily

25X1

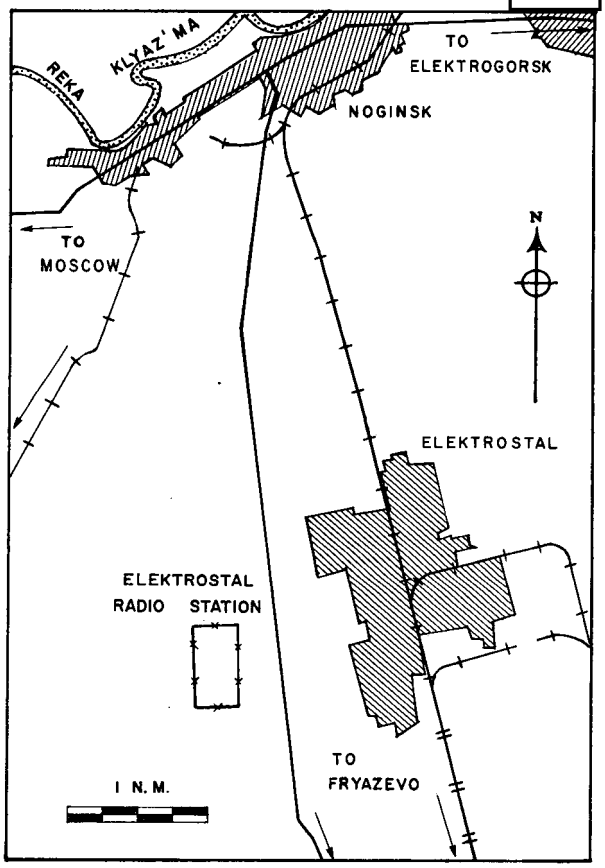


FIG. 27. LOCATION MAP

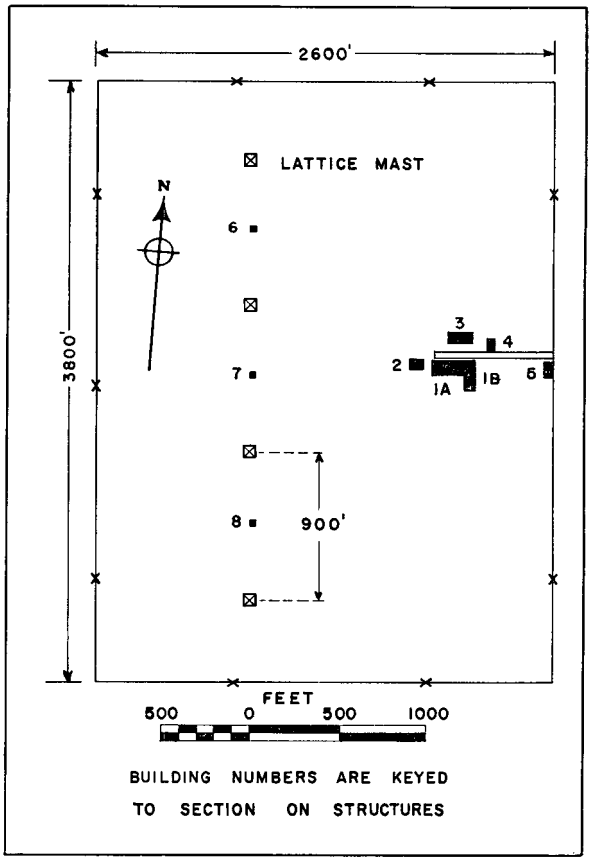


FIG. 28. LINE DRAWING OF ELEKTROSTAL RADIO STATION

25X1

25X1

of a control building, a possible cooling tower, three buildings probably housing antenna coupling/tuning equipment, and four tall guyed steel masts (Figures 28 and 29).

II. STRUCTURES

The following is a tabulation of all structures in the area as of [redacted] 25X1 (item numbers are keyed to Figure 28).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building	-	-	-
1a	Base	2 or 3	Valley	185 x 70
1b	Wing	2 or 3	Valley	80 x 55
2	Probable support building	1	-	55 x 35
3	Probable support building	1	-	90 x 55
4	Possible cooling tower	1	-	35 x 35
5	Guardhouse	1	-	55 x 35
6, 7, 8	Coupling/tuning houses	1	-	-

25X1

III. ANTENNAS

Aerial photography of [redacted] shows the four guyed steel masts, approximately 740 feet high and 900 feet apart, to be located in a straight line and oriented in an approximate north-south direction. A small building probably housing coupling/tuning equipment is located in line with and midway between each of these masts. The location of these coupling/tuning buildings may indicate that center-fed horizontal-dipole-type antennas are supported by the masts. [redacted] 25X1 25X1

[redacted]

25X1

FIG. 29. ELEKTROSTAL RADIO STATION

25X1

PIC/JR-8/59

PHOTO DATA:

25X1

25X1

MAP DATA:

ATMP- -100 (S)
-4-25MA, Item 4-5 (S)

25X1

COORDINATES: 55°46'N/38°25'E
37UDB638819

PIC/JR-8/59

25X1

NUMBER 35

BYKOVO RADIO STATION

I. GENERAL

Bykovo Radio Station is located about 17 nautical miles east-southeast of Moscow and immediately adjacent to the west side of Bykovo Airfield (Figure 30). The station is enclosed by a fence 620 feet square and covers an area of approximately 9 acres. It is served by an all-weather road. Aerial photography of [redacted] shows the station to consist of a control building, a cooling pond, a guardhouse, several other small structures, and several masts (Figure 31). No overhead power and/or communication lines can be identified on the photography.

25X1

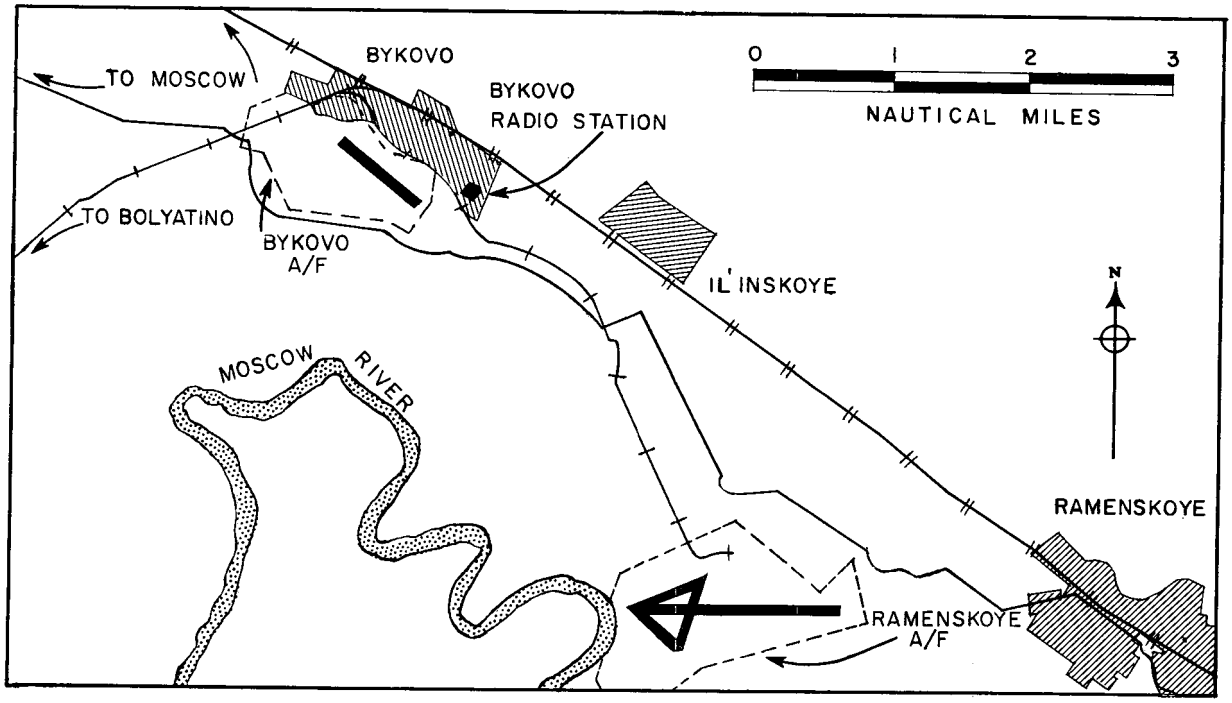


FIG. 30. LOCATION MAP

25X1

PIC/JR-8/59

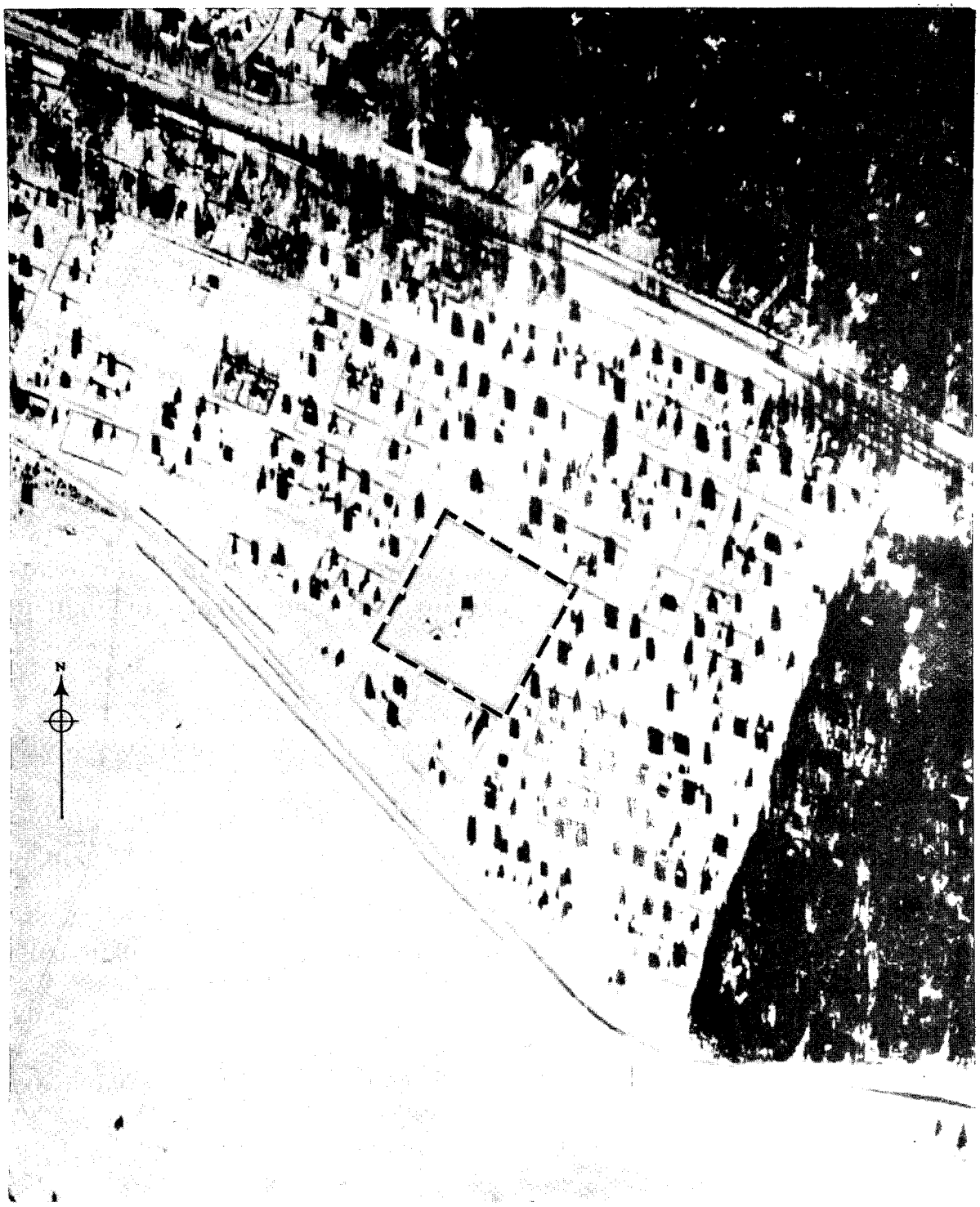


FIG. 31. BYKOVO RADIO STATION [redacted]

25X1

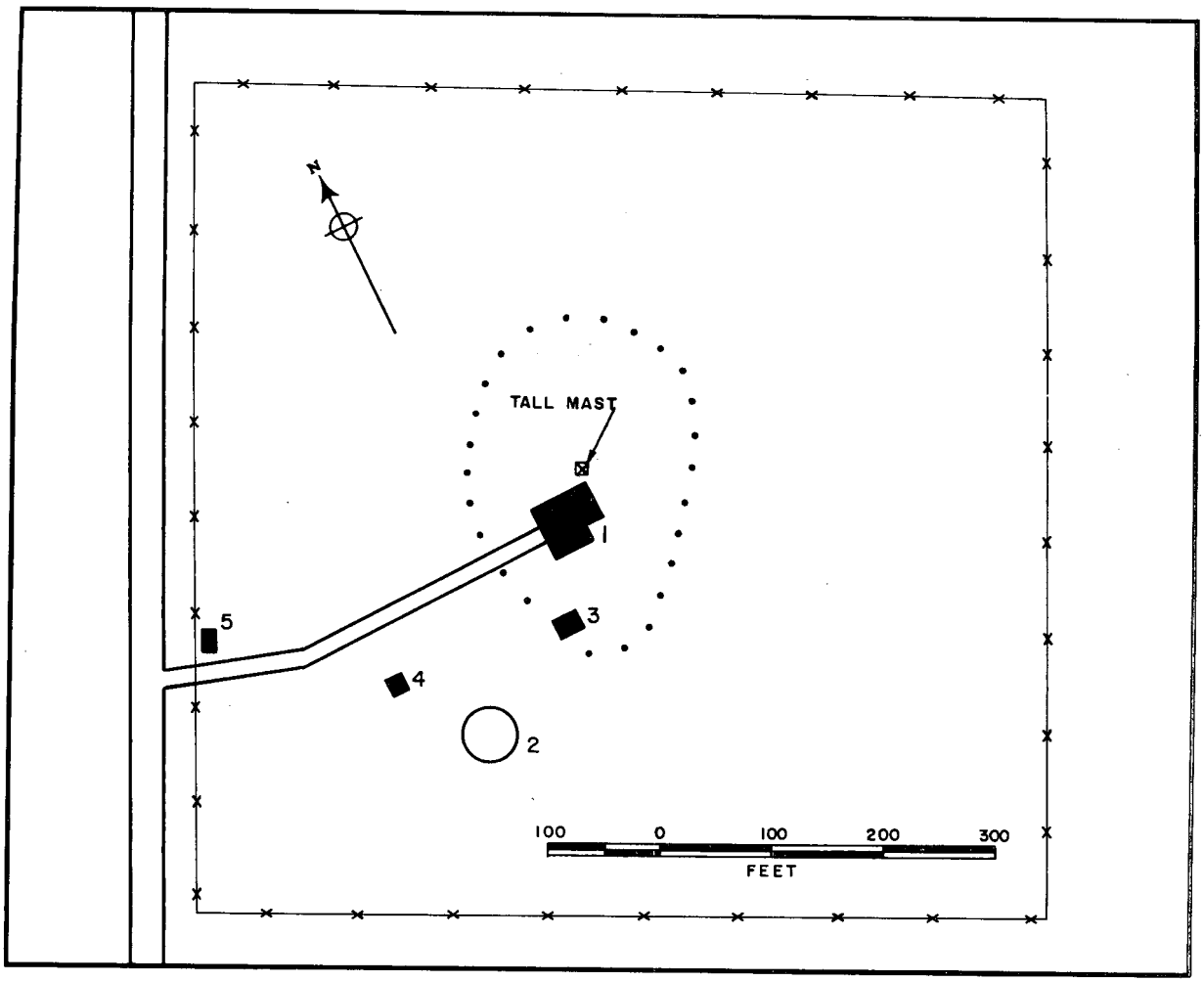


FIG. 32. LINE DRAWING OF BYKOVO RADIO STATION

II. STRUCTURES

The following is a tabulation of major structures within the station as of [redacted] (item numbers are keyed to Figure 32).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
25X1 1	Control building	1	Complex	50 x 45
2	Cooling pond	-	-	30 dia
3	Support-type building	1	-	25 x 25
4	Support-type building	1	-	25 x 20
5	Guardhouse	1	-	15 x 15

25X1

PIC/JR-8/59

III. ANTENNAS

The [redacted] photography shows one mast approximately 65 feet high located in the center of an elliptical pattern of approximately 25 evenly spaced masts each 20 feet high. The diameter of this pattern of masts is 200 feet. 25X1

[redacted]

25X1

[redacted]

MAP DATA:

25X1 ATMP [redacted] -3-100. (S)

-26-25MA, Item 26-1. (S)

25X1

[redacted]

COORDINATES: 55°37'N/38°05'E

37UDB415635

PIC/JR-8/59

25X1

NUMBER 37

BIRYULEVO ANTENNA FARM

Biryulevo Antenna Farm is located 10 nautical miles south of Moscow in the vicinity of the towns of Lenino, Biryulevo, and Tsaritsino (Figure 33). It is situated in a partially wooded area west of the Moscow/Kashira highway. The poor resolution and partial cloud cover of aerial photography 25X1

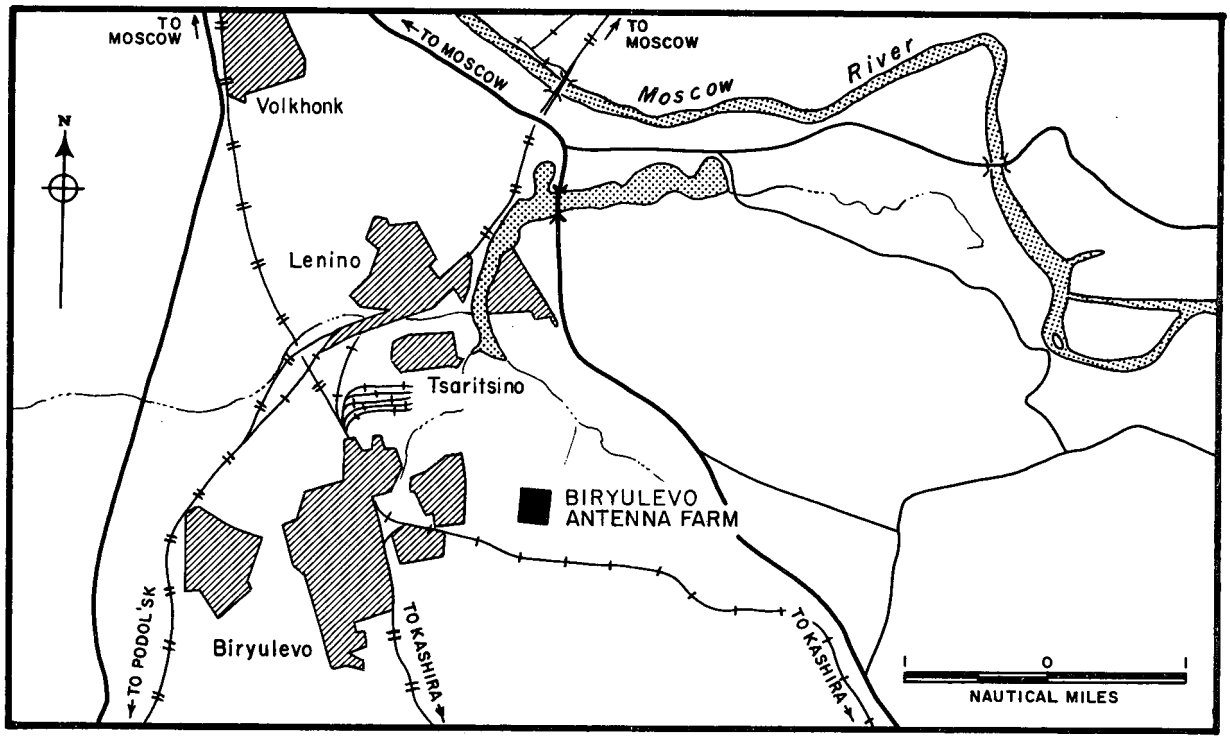


FIG.33. LOCATION MAP

prohibit the identification of any antenna patterns or actual site limits; however, a T-shaped control building, a support-type building, and a possible tent area can be identified (Figure 34). A military area is located immediately north of the farm site. The antenna farm does not appear

25X1

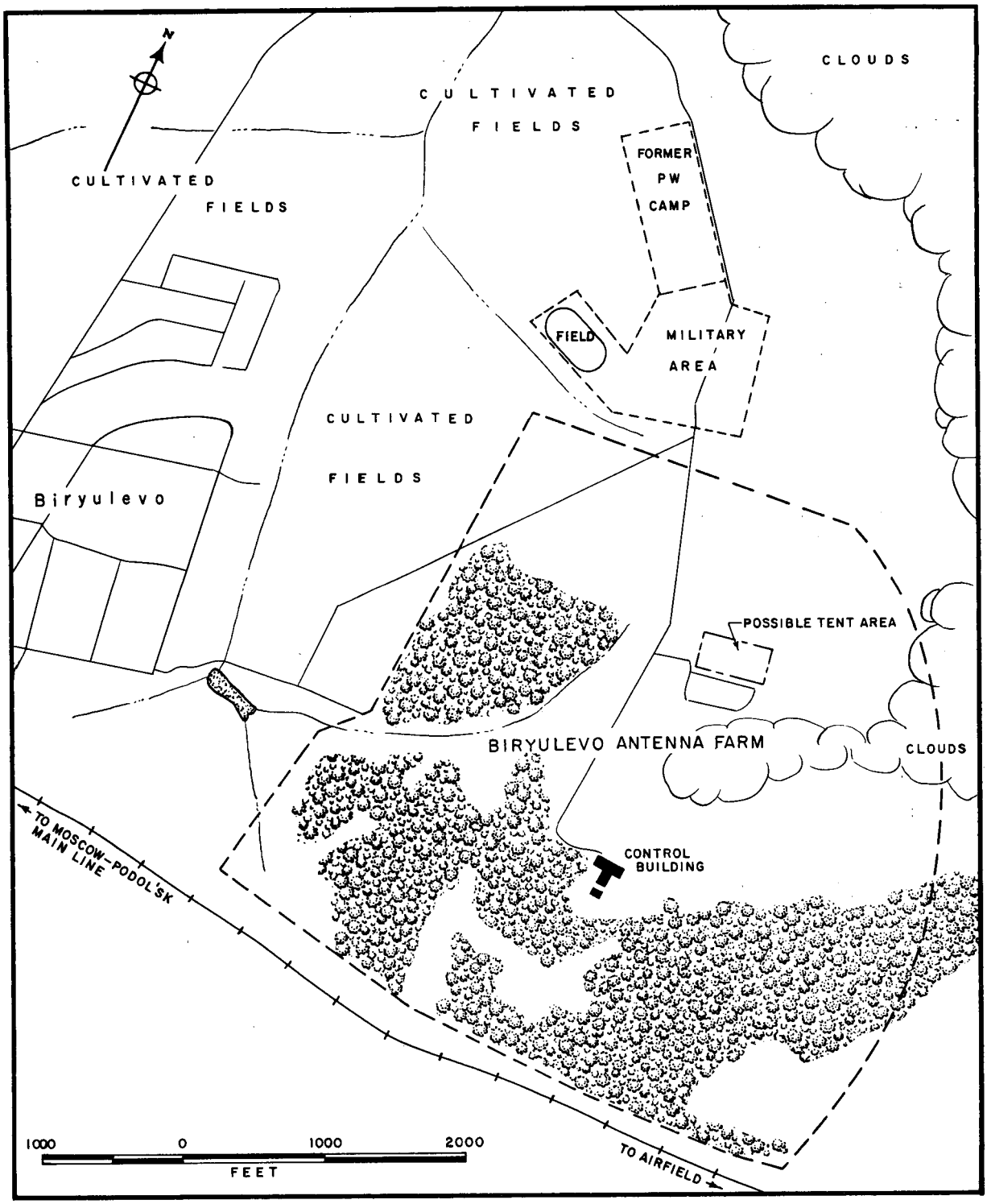


FIG. 34. BIRYULEVO ANTENNA FARM

25X1 25X1

PIC/JR-8/59

25X1

25X1 PHOTO DATA:

25X1

MAP DATA:

ATMP 3-100. (S)
4-100. (S)
25X1 13-25MA. (S)

COORDINATES: 55°36'N/37°41'E
37UDB175608

25X1

25X1

NUMBER 40

DOMODEDOVO ANTENNA FARM

I. GENERAL

Domodedovo Antenna Farm is located 17 nautical miles south of Moscow, along the east side of the Moscow/Kashira highway and on the northern outskirts of Domodedovo (Figure 35). The farm, which is enclosed by a fence, covers an area of approximately 500 acres and is served by an all-weather road. There are approximately 25 structures of various sizes and many stick masts within the area. Several structures, including a control building, are visible on aerial photography. Aerial photog- 25X1

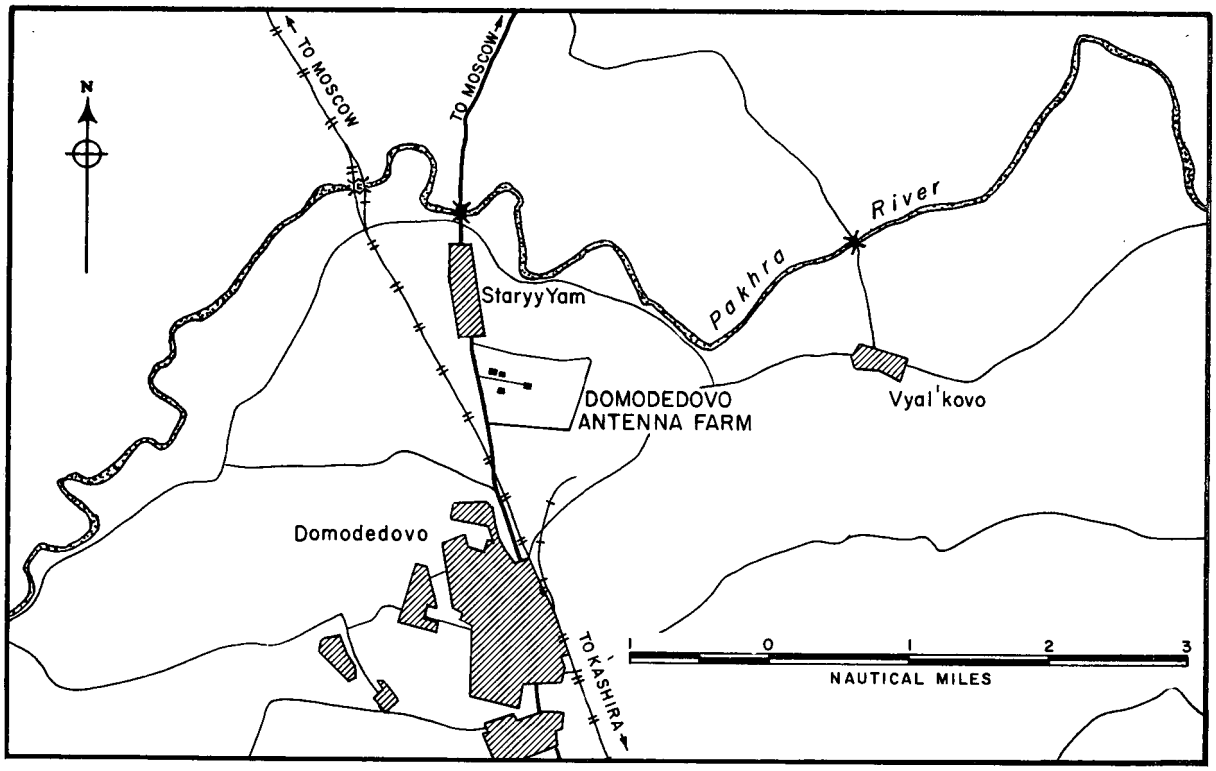


FIG. 35. LOCATION MAP

25X1

raphy of and ground photography of 1958 reveal that additional housing and support buildings had been constructed since (Figure 36).

25X1

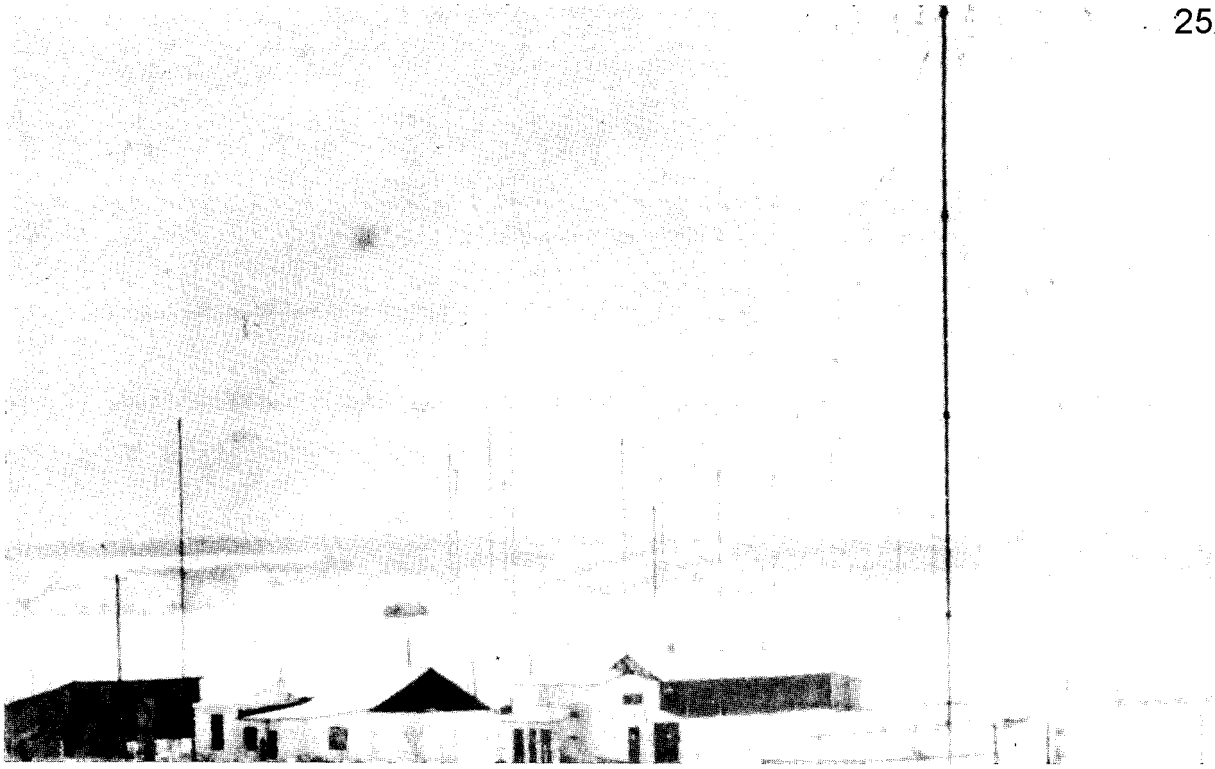


FIG.36. DOMODEDOVO ANTENNA FARM View of 4 support-type buildings and 20 guyed stick masts (1958)

II. STRUCTURES

The following is a tabulation of the structures within the area as of item numbers are keyed to Figure 37).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building	2	Complex	60 x 35
2	Unidentified	-	-	20 x 15
3	Support building	-	-	50 x 30
4	4 barracks	2	Hip	55 x 30
5	Support building	1	-	50 x 35
6	Support building	1	-	30 x 20

25X1

PIC/JR-8/59

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
7	3 dwellings	1	Gable	45 x 25
8	Possible administration building	2	Hip	50 x 35
9	Barracks	2	Hip	80 x 40
10	Support building	1	Complex	95 x 45
11	Support building	1	Complex	110 x 50
12	Support building	-	-	50 x 20
13	Support building	-	Gable	80 x 40
14	Support building	-	Gable	50 x 20
15	Support building	-	-	55 x 20
16	Unidentified	-	-	60 x 30

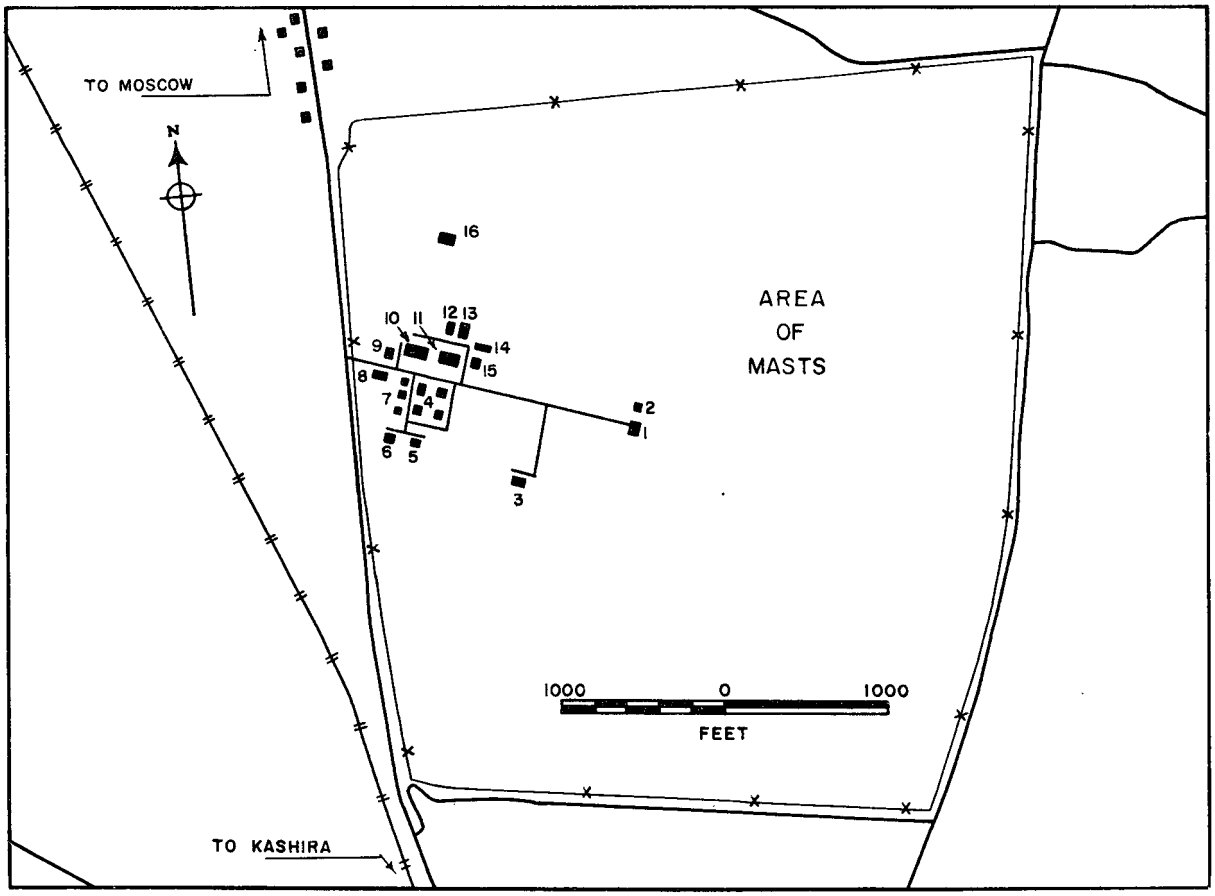


FIG.37. LINE DRAWING OF DOMODEDOVO ANTENNA FARM

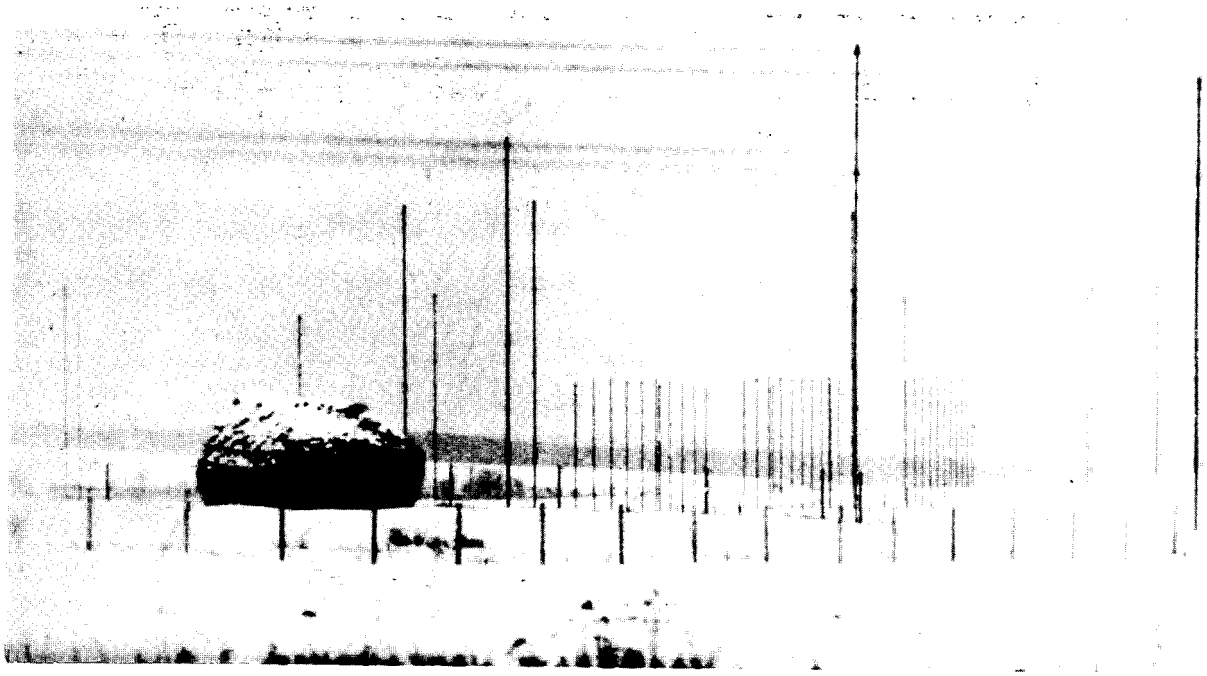
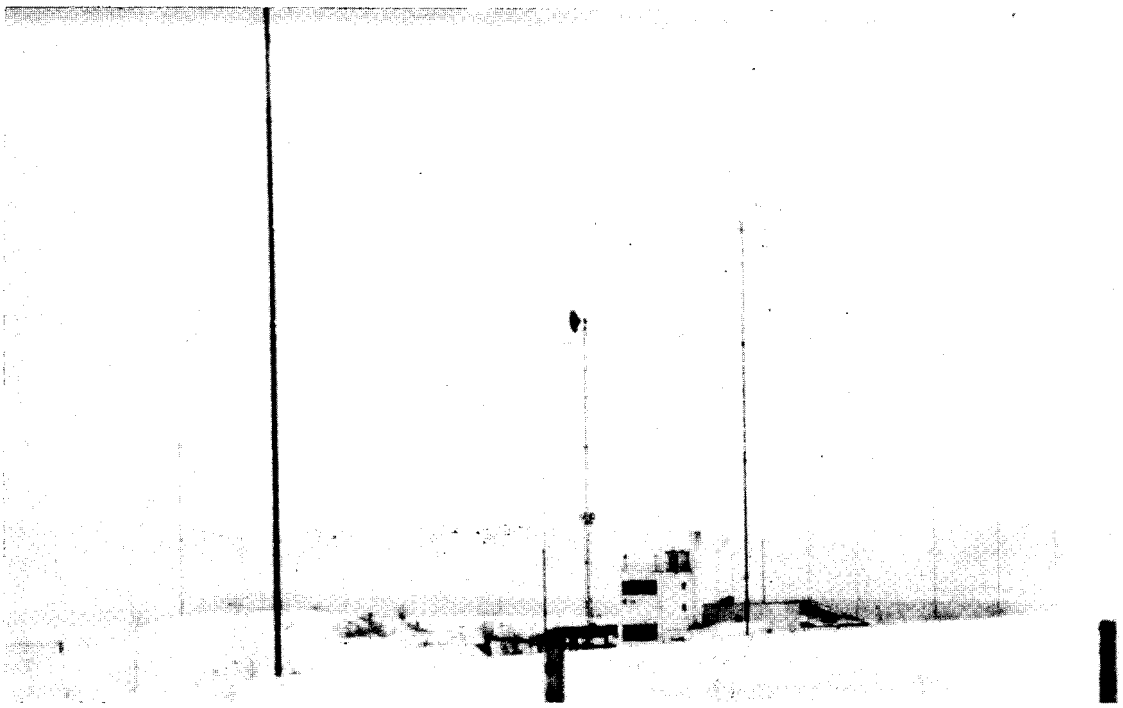


FIG.38. DOMODEDOVO ANTENNA FARM View of 14 guyed stick masts and 30 self-supporting stick masts in a 10-10-10 pattern (1958)



25X1 *FIG.39. DOMODEDOVO ANTENNA FARM View of the control building, 20 guyed stick masts, and a microwave parabola mounted on top of a guyed steel mast (1958)*

25X1

III. ANTENNAS

Aerial photography of [redacted] shows no antenna patterns, owing to its poor resolution. Ground photography of 1958 shows numerous guyed stick masts and the following types of antennas: rhombic antennas, horizontal cage antennas, and an arrangement of 30 self-supporting stick masts in a 10-10-10 pattern. At least one microwave parabola mounted at the top of a guyed sectional steel mast also appears on [redacted] 25X1 photography. (Figures 36, 38, and 39).

25X1

PHOTO DATA:

[redacted]

25X1

MAP DATA:

ATMP [redacted] 3-100. (S)
29-25M. (S)

25X1

[redacted]

COORDINATES: 55°28'N/37°45'E
37UDB220470

PIC/JR-8/59

NUMBER 46

BUTOVO ANTENNA FARM

25X1

25X1

I. GENERAL

Butovo Antenna Farm is located 13 nautical miles south of Moscow and adjacent to the southwest corner of Butovo (Figure 40). This farm, which covers approximately 640 acres, is enclosed by a fence and served by an all-weather road. Aerial photography of [redacted] (Fig. 41) and [redacted] and ground photography of 1957 show that the site consists primarily of a central control building, two subordinate control buildings, several smaller buildings, 27 fishbone antenna arrays, and several possible rhombic antennas.

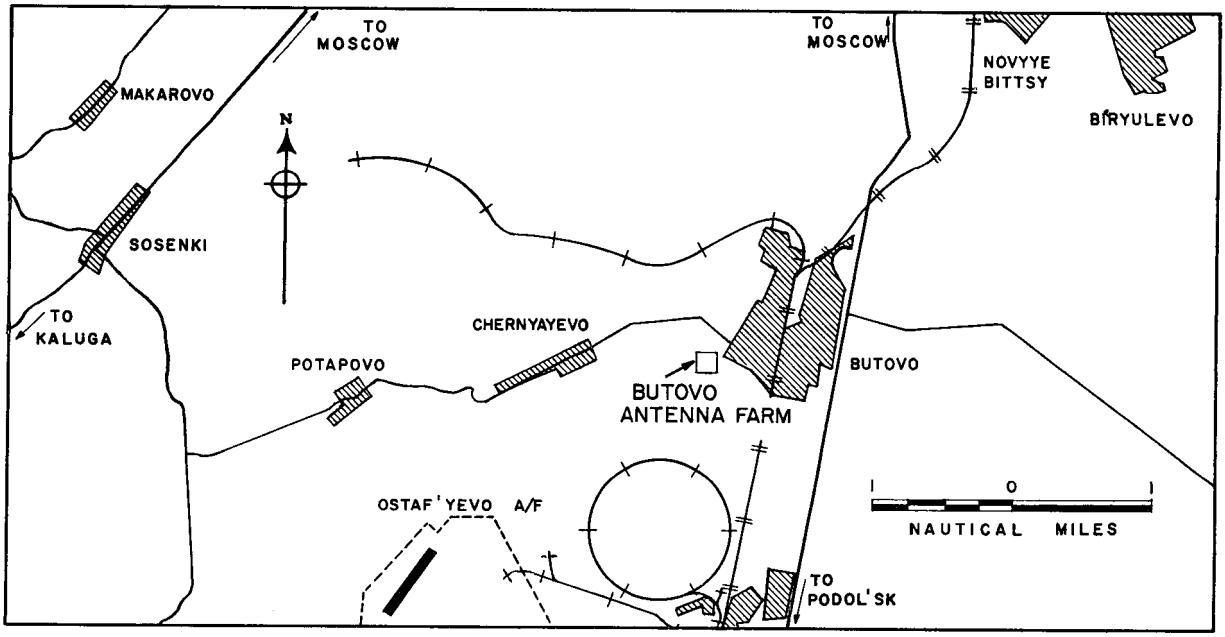


FIG. 40. LOCATION MAP

II. STRUCTURES

The following is a tabulation of the major structures within the site as of [redacted] (item numbers are keyed to Figure 42).

25X1

25X1

25X1

PIC/JR-8/59

FIG.41. BUTOVO ANTENNA FARM

25X1

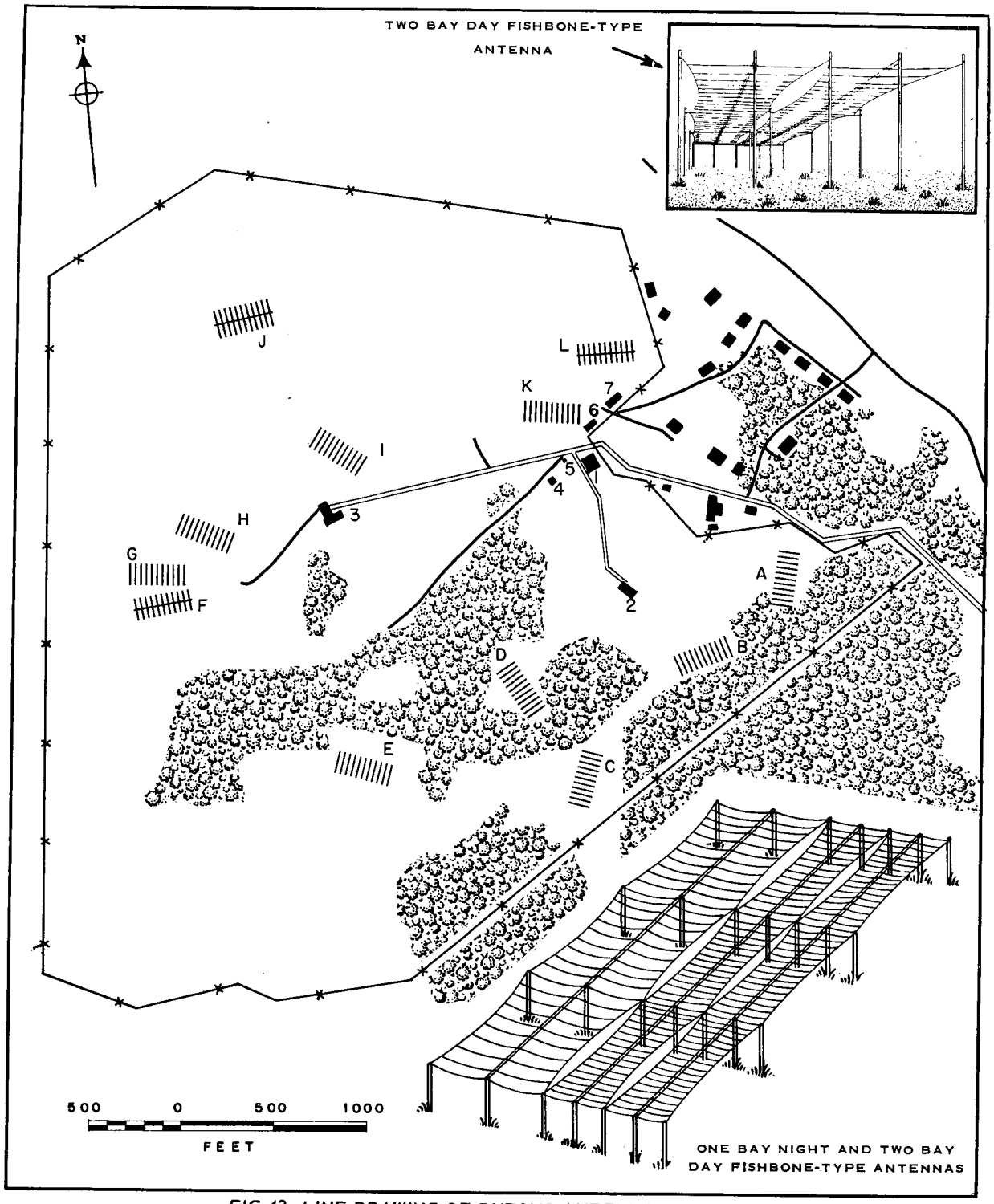


FIG. 42. LINE DRAWING OF BUTOVO ANTENNA FARM

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Central control building	2 or 3	Complex	90 x 80
2	Control building	2 and 3	Hip	75 x 50
3	Control building	2 or 3	Valley	-
3a	Base	2 or 3	-	50 x 40
3b	Stem	2 or 3	-	60 x 30
4	Support building	1	Gable	45 x 20
5	Support building	1	Gable	25 x 25
6	Support building	1	Gable	35 x 20
7	Support building	1	Gable	85 x 25

III. ANTENNAS

The antenna field appearing on [redacted] photography contains 15 fishbone antennas, of which 12 are of the two-bay day antenna type and 3 are of the one-bay night antenna type. The three one-bay night types are constructed adjacent to three of the two-bay day types (see the following table, item letters F, J, and L). Approximately 20 tall stick masts possibly supporting rhombic-type antennas appear on 1952 ground photography. The following table gives data on the fishbone antennas (item letters are keyed to Figure 42). 25X1

Item Letter	Antenna Type	Dimensions (feet)* Single Bay Length	Width	Azimuth Orientation (degrees)
A	Two-bay day	320	60	[redacted] 25X1
B	Two-bay day	320	60	
C	Two-bay day	320	60	
D	Two-bay day	320	60	
E	Two-bay day	320	60	
F	Two-bay day	320	60	
	One-bay night	320	[redacted]	25X1

Table continued on next page

* As determined from pole excavation scars; the poles cannot be seen on the photography.

(CONTINUED)

Item Letter	Antenna Type	Dimensions (feet) Single Bay Length	Width	Azimuth Orientation (degrees)
G	Two-bay day	320	60	
H	Two-bay day	320	60	
I	Two-bay day	320	60	
J	Two-bay day	320	60	
	One-bay night	320		
K	Two-bay day	320	60	
L	Two-bay day	320	60	
	One-bay night	320		

25X1

25X1

25X1

PHOTO DATA:

Aerial Photography

25X1

25X1

MAP DATA:

ATMP 0167-9998-4-100. (S)

COORDINATES: 55°32'N/37°33'E

37UDB102572

25X1

NUMBERS 49, 50, 53, and 54

COMMUNICATIONS COMPLEX NEAR DESNA

A communications complex is located along the Moscow/Kaluga highway, 18 nautical miles (nm) southwest of Moscow (Figure 43). The complex includes an operational area, with four separately fenced radio stations, extending east of the Moscow/Kaluga highway between the towns of

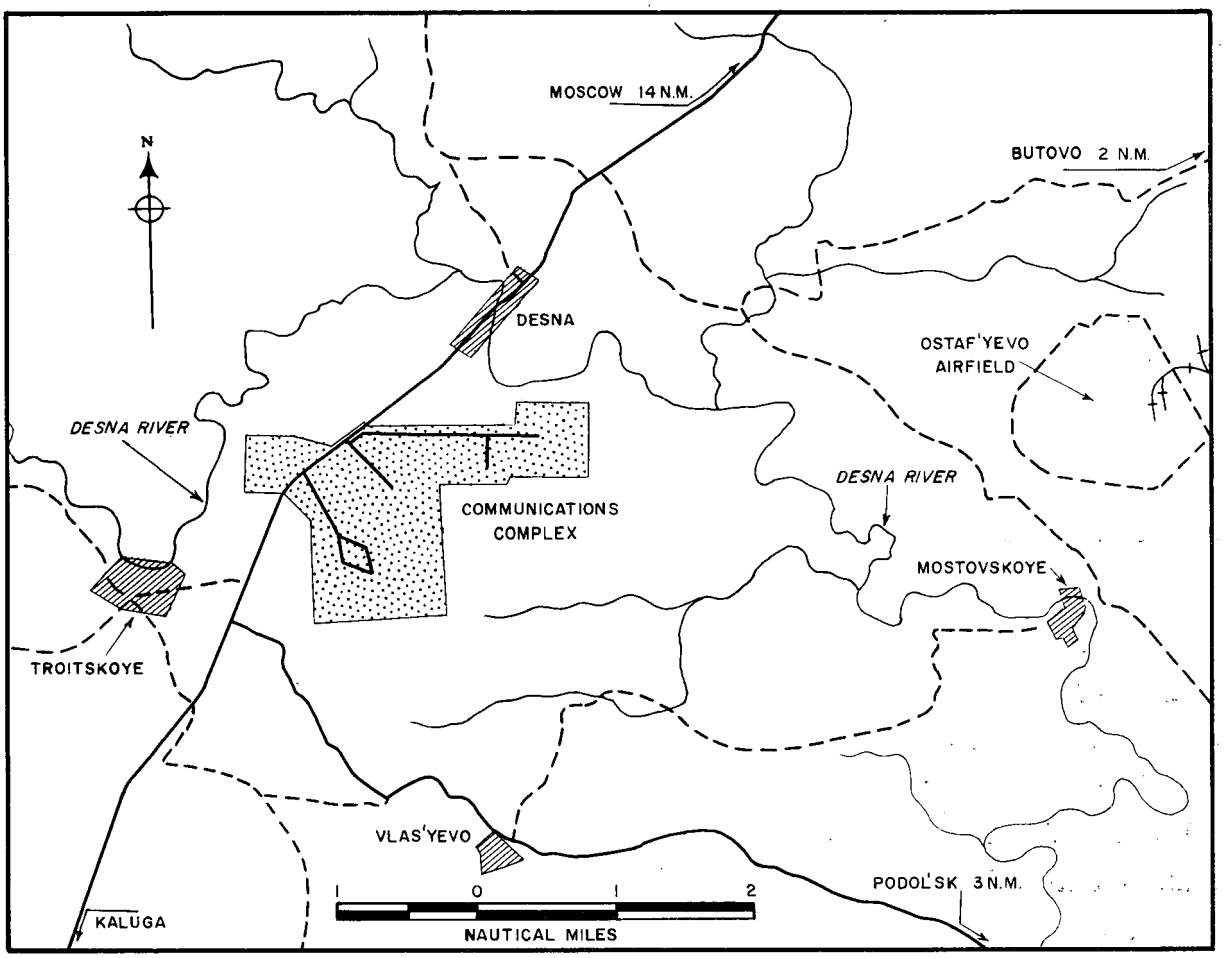


FIG. 43. LOCATION MAP

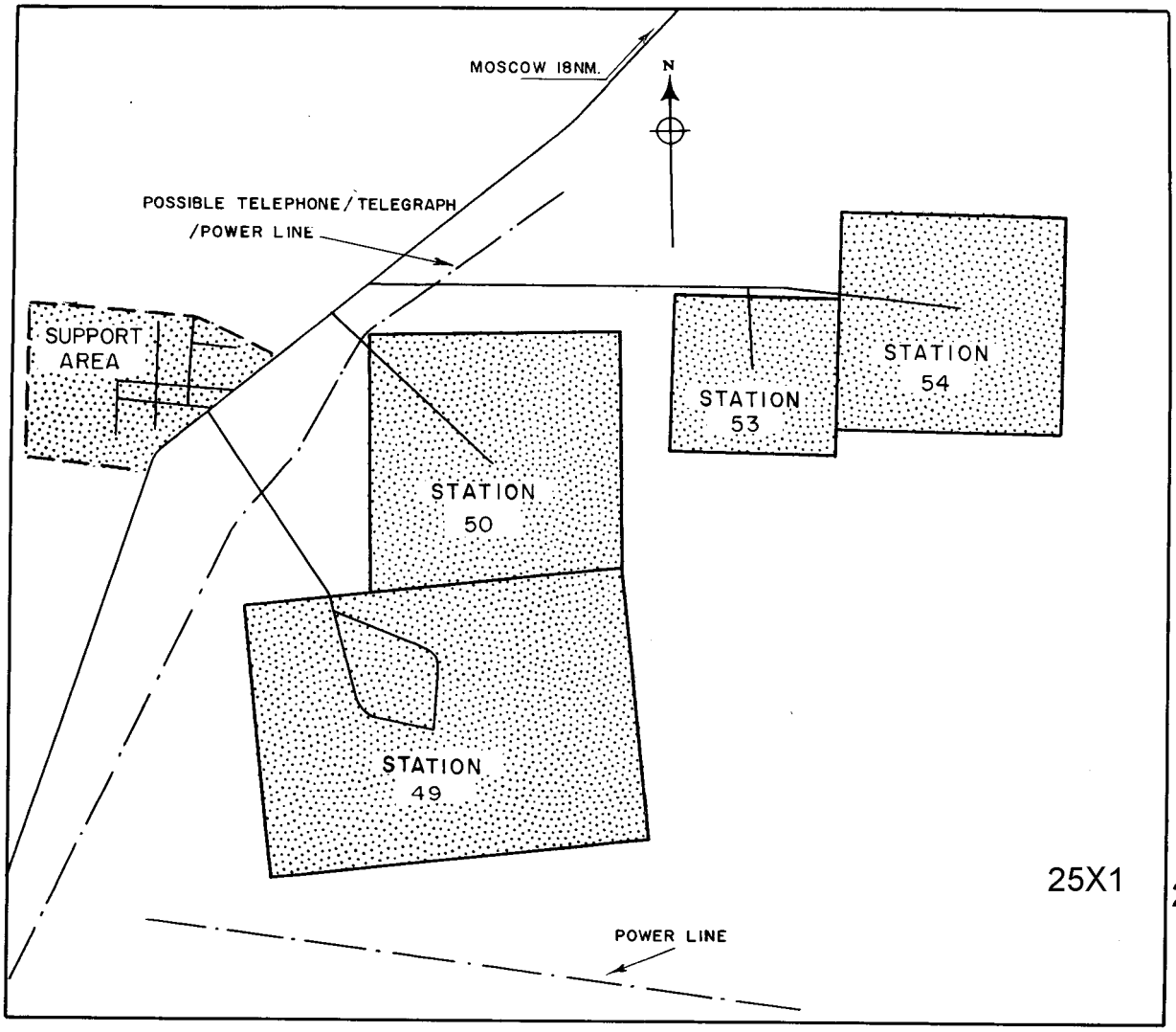


FIG.44. LINE DRAWING OF COMMUNICATIONS COMPLEX NEAR DESNA

Desna and Vatutinki; and a general support area, located adjacent to the west side of the highway at a point opposite the operational area. The over-all complex covers 1,369 acres (Figures 44 and 45).

The four radio stations are designated in this report as stations 49, 50, 53, and 54 (Figure 44). A comparison of [redacted] aerial photography shows that stations 49, 50, and 54 were present in [redacted] and that Station 53 was constructed later. The support area is not covered by [redacted] photography. Between [redacted] Station 49, the largest of 25X1

25X1

PIC/JR-8/59

FIG.45. COMMUNICATIONS COMPLEX NEAR DESNA [redacted] It should be noted that this oblique photograph is turned 180° from FIG 44

the four, had an increase in the number of structures, but the antenna field pattern appears unchanged. Station 50 had an increase in the number of structures, but, although the antenna field pattern appears slightly changed, nothing indicates any change in the number and type of antennas. Station 54 had an increase in the number of structures, and the field pattern indicates the construction of additional antennas.

The presence of only rhombic and fishbone antennas is indicated by the pattern of tree clearings. The absence of cooling facilities, the existence of fishbone receiving antennas, and the orientation diversity of the rhombic antennas indicate that this is a probable receiving complex. A Krug site, not considered a part of this complex, is located 2 nm south of Station 49 (Figure 45).

SUPPORT AREA

I. GENERAL

The support area is on the west side of the Moscow/Kaluga highway, 17.5 nm southwest of Moscow (Figures 43 and 44). The support area, a fenced area of 135 acres (2,800 by 2,100 feet), probably serves all four radio stations (Figure 46). It includes 69 buildings, one of which is under construction, three unidentified areas, an athletic field, and a network of paved streets. Three streets connect the area to the Moscow/Kaluga highway. A road leads west from the southwest fence corner to an elaborate housing area which is not believed to be part of the communications complex.

II. STRUCTURES

The structures existing as of [redacted] are listed in the following tabulation (item numbers are keyed to Figure 46).

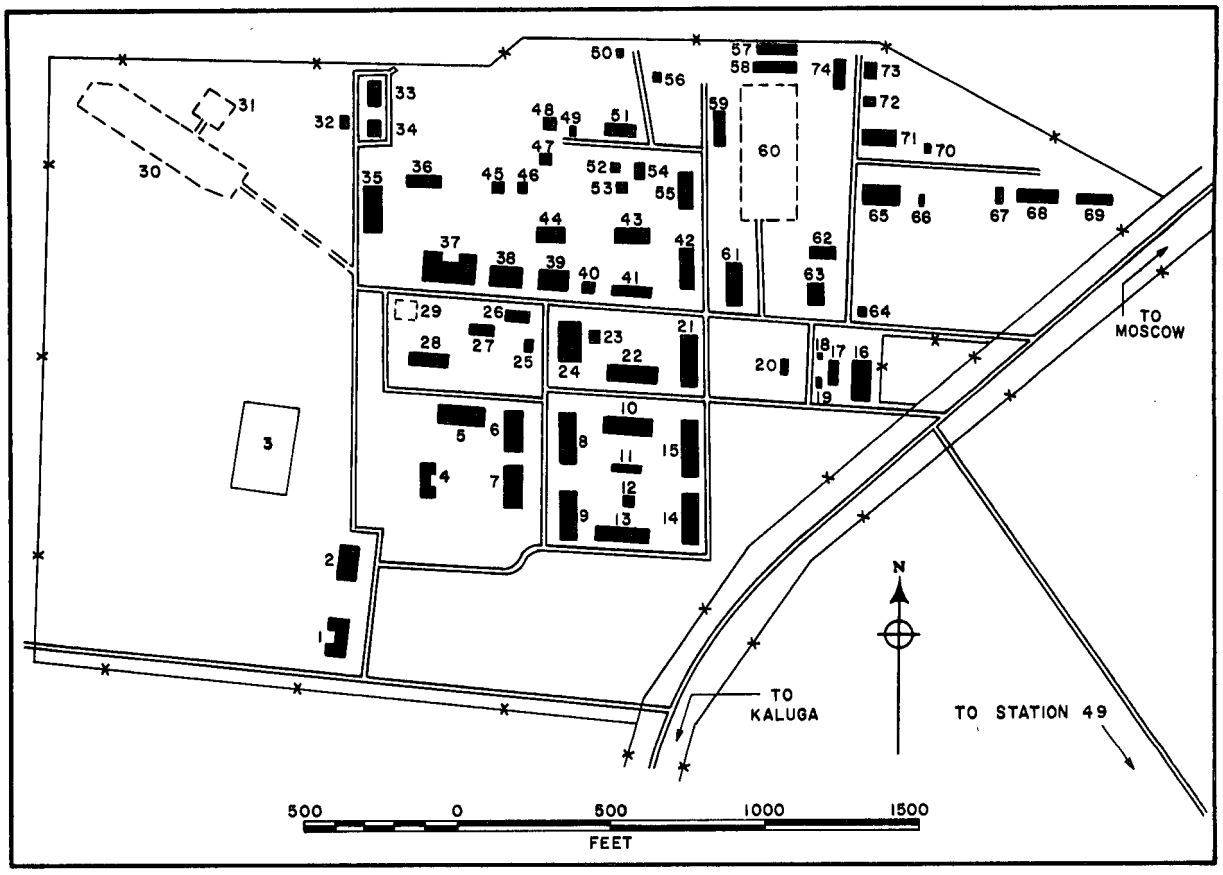


FIG.46. LINE DRAWING OF SUPPORT AREA

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Administration-type building, U-shape	2 1/2	Hip	130 x 35 (main) 35 x 20 (wings)
2	Administration-type building	1	Hip	115 x 45
3	Athletic field	-	-	330 x 200
4	Administration-type building, U-shape	2	Hip	120 x 35 (main) 35 x 20 (wings)
5	Barracks	2	Hip	145 x 40
6	Barracks	1	Hip	145 x 40
7	Barracks	1	Hip	145 x 40
8	Probable apartment building	1	Gable	200 x 35

PIC/JR-8/59 25X1

(CONTINUED)

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
9	Probable apartment building	1	Gable	200 x 35
10	Probable apartment building	1	Gable	200 x 35
11	Support building	1	Gable	110 x 20
12	Support building	1	Gable	30 x 25
13	Probable apartment building	1	Gable	200 x 35
14	Probable apartment building	1	Gable	200 x 35
15	Probable apartment building	1	Gable	200 x 35
16	Probable security building	1	Gable	165 x 65
17	Support building	1	Gable	80 x 25
18	Support building	1	Shed	15 x 10
19	Support building	1	Shed	20 x 10
20	Support building	1	Gable	40 x 25
21	Probable apartment building	1	Gable	200 x 35
22	Probable apartment building	1	Gable	200 x 35
23	Support building	1	-	30 x 30
24	Barracks	1	Hip	145 x 40
25	Support building	1	Gable	20 x 15
26	Support building	1	Gable	75 x 20
27	Support building	1	Gable	75 x 20
28	Support building	1	Gable	110 x 35
29	Building U/C	-	-	75 x 75
30	Unidentified area	-	-	650 x 150
31	Unidentified area	-	-	125 x 100
32	Support building	1	Gable	30 x 25

25X1

PIC/JR-8/59

(CONTINUED)

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
33	Support building	1	Gable	80 x 35
34	Support building	1	Gable	60 x 35
35	Support building	1	Hip	165 x 45
36	Support building	1	Gable	120 x 25
37	Administration-type building, U-shape	1 1/2	Hip	165 x 65 (main) 50 x 35 (wings)
38	Barracks	1	Hip	100 x 65
39	Barracks	1	Hip	100 x 65
40	Support building	1	Gable	30 x 25
41	Barracks	1	Hip	130 x 35
42	Barracks	1	Gable	130 x 30
43	Possible barracks	1	Gable	110 x 40
44	Support building	1	Gable	80 x 40
45	Support building	1	Gable	30 x 25
46	Support building	1	Gable	30 x 20
47	Support building	1	Gable	30 x 25
48	Support building	1	Gable	40 x 30
49	Support building	1	Gable	20 x 15
50	Support building	1	Gable	20 x 15
51	Possible barracks	1	Gable	110 x 35
52	Support building	1	Gable	30 x 25
53	Support building	1	Gable	35 x 30
54	Support building	1	Gable	50 x 25
55	Possible barracks	1	Gable	120 x 35
56	Support building	1	Gable	25 x 20
57	Support building	1	Gable	130 x 25
58	Support building	1	Gable	165 x 25
59	Possible barracks	1	Hip	130 x 30
60	Unidentified area U/C	-	-	460 x 200
61	Barracks	1	Gable	130 x 40

(CONTINUED)

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
62	Support building	1	Gable	80 x 40
63	Support building	1	Hip	75 x 40
64	Support building	1	Gable	35 x 25
65	Possible barracks	2	Gable	130 x 45
66	Support building	1	Gable	40 x 25
67	Support building	1	Gable	50 x 25
68	Support building	1	Gable	130 x 35
69	Support building	1	Gable	130 x 25
70	Support building	1	Gable	30 x 25
71	Possible barracks	1	Gable	115 x 40
72	Support building	1	Gable	30 x 25
63	Support building	1	Hip	80 x 30
74	Support building	1	Hip	95 x 25

STATION 49

25X1

I. GENERAL

Station 49 (Figure 47), covering a fenced area of approximately 527 acres (5,600 by 4,100 feet), is located 18 nm southwest of Moscow. The area is served by a 25-foot-wide paved road which leads east from the Moscow/Kaluga highway. Aerial photography of [redacted] shows the station to include a control building, a possible semiburied structure under construction, and numerous other buildings. Ground scars in the area indicate that some of the buildings had been recently constructed. A tent area is probably used to house construction workers. The antenna field contains at least 18 probable rhombics.

25X1

II. STRUCTURES

The structures in Station 49 as of [redacted] are listed in the following tabulation (item numbers are keyed to Figure 47).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building	2	Hip	200 x 50
2	Support building	1	Shed	15 x 15
3	Support building	1 1/2	Hip	50 x 50
4	Support building	1	Gable	45 x 40
5	Support building	1	Gable	50 x 25
6	Tent area	-	-	230 x 130
7	Support building	1	Hip	60 x 30
8	Unidentified building	-	-	50 x 40
9	Unidentified building (poss. U/C)	-	-	130 x 90
10	Unidentified area	-	-	300 x 170
11	Possible semiburied structure U/C	-	-	70 x 50
12	Support building	1	Gable	80 x 35
13	Support building	1	Gable	40 x 40
14	Support building	1	Gable	110 x 30
15	Support building	1	Gable	110 x 30
16	Support building	1	Gable	120 x 35
17	Support building	1	Gable	50 x 30
18	Support building	1	Gable	110 x 30
19	Support building	1	Gable	50 x 35
20	Support building	1	Gable	55 x 40
21	Support building	1	Gable	145 x 45
22	Unidentified area	-	-	265 x 165

III. ANTENNAS

The antenna field almost encircles the control building. The field is covered with timber, and the only clearings are the locations of the rhombics and their feed lines. There are 18 diamond-shaped clearings, one of which is occupied by the tent area (Figure 47, Item 6).

Ground scars indicating the position of masts and guy-wire anchor bases can be identified in 8 of the diamond-shaped clearings. These scars remained unchanged from [redacted] Two types of antenna patterns are formed by the positioning of these ground scars (Figure 48). The antenna configurations shown on Figure 48 are only suggested wiring diagrams. It is also possible, however, that the exterior rhombic was constructed first and then removed or that the interior was constructed first and then removed. These configurations with one rhombic antenna within another have not previously been noted on other aerial photography of the Soviet Bloc.

25X1

[redacted]

25X1 [redacted] Each aerial of the pair covers a frequency range of about 2.5:1, and between them they cover virtually all the frequencies likely to be used on one circuit. This type of rhombic may also be used for circuits where high gain is required, particularly at the lower frequencies and at low angles.

Type I (Figure 48) is a double-end-pole rhombic with a smaller double-end-pole rhombic located within its parameters. Type II (Figure 48) is a single-end-pole rhombic with a smaller double-end-pole rhombic located within its parameters. The item letters in the following tabulations are keyed to Figure 47. All dimensions are expressed in feet.

ANTENNAS

Item Letter	Type	Dimensions: Major Axis Ex	Major Axis In	Minor Axis Ex	Minor Axis In	Side Ex	Length In	End Mast Separation Ex	End Mast Separation In	Computed Tilt Angle Ex	Computed Tilt Angle In	Approx. Azimuth Orientation (degrees)
E	II	760	430	350	350			-	50			
F	II	760	430	365	365			-	50			
G	II	725	430	365	365			-	50			
H	I	760	430	365	365				50			
I	I	775	420	380	380				50			
J	I	725	430	365	365				50			
K	II	695	420	360	360			-	50			
L	II	725	395	360	360			-	50			

25X1 25X1 25X1

Note: Exterior (Ex) dimensions are for large antennas; interior (In) dimensions are for small antennas.

PIC/JR-8/59

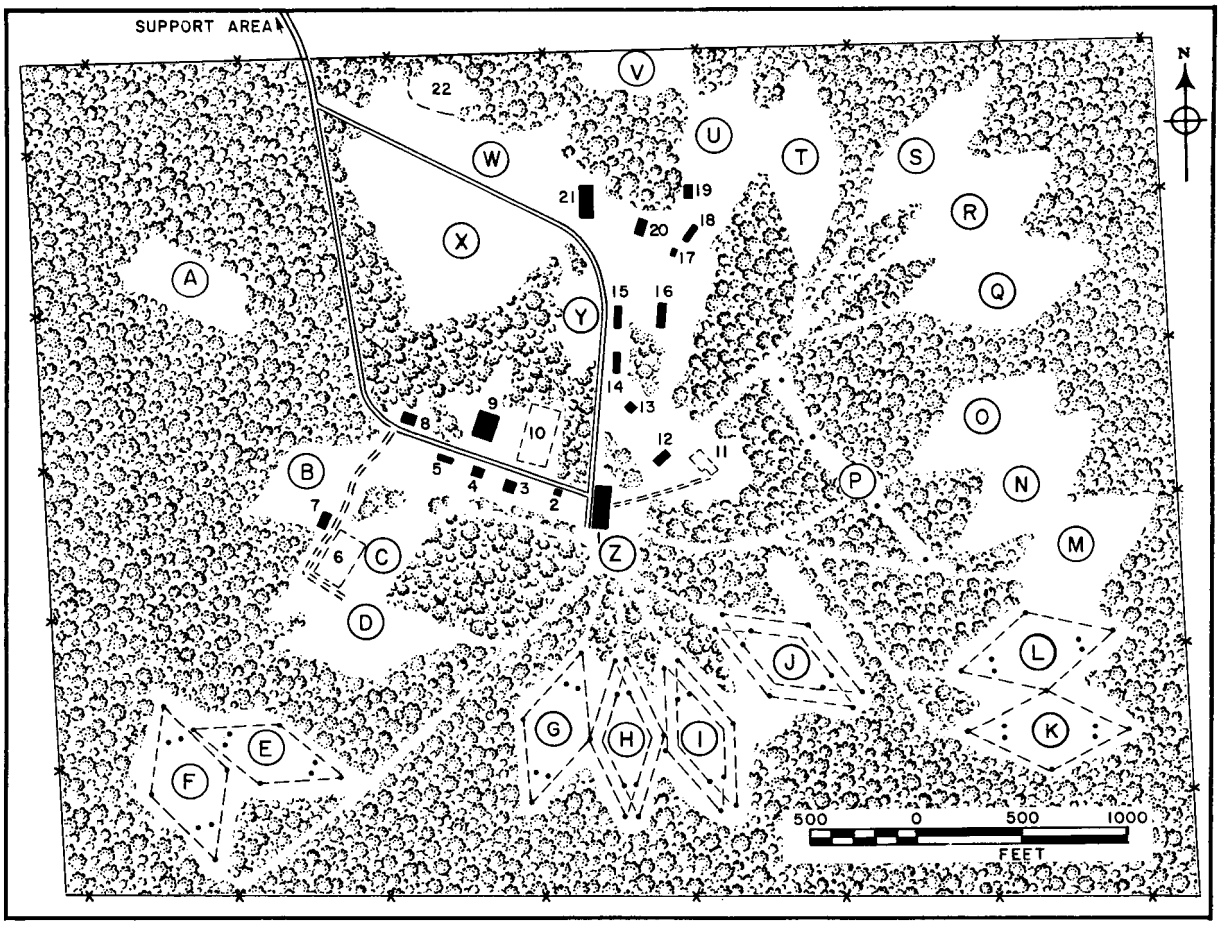


FIG. 47. LINE DRAWING OF STATION 49

RHOMBIC CLEARINGS

Item Letter	Dimensions * Major Axis	Minor Axis	Approx. Azimuth Orientation (degrees)
B	820	430	
C	925	365	
D	890	430	
M	890	365	
N	890	365	
O	820	365	
Q	925	430	
R	860	365	
S	925	365	
T	925	365	

25X1

* Over-all lengths and widths for the diamond-shaped clearings. The rhombic antennas that may be located in these clearings would have smaller dimensions. The exact antenna pattern, however, cannot be seen.

25X1

OTHER CLEARINGS

Item Letter	Shape	Dimensions Length	Width	Utilization
A	Rectangular	630	365	Cultivated field
P	Linear	1,325	65	U/I
U	Rectangular	560	400	U/I
V	Rectangular	560	230	Cultivated field
W	Rectangular	1,090	265	U/I
X	Triangular	1,150	725	Cultivated field
Y	Rectangular	430	200	Poss. construction area
Z	Rectangular	330	230	Feed line junction area

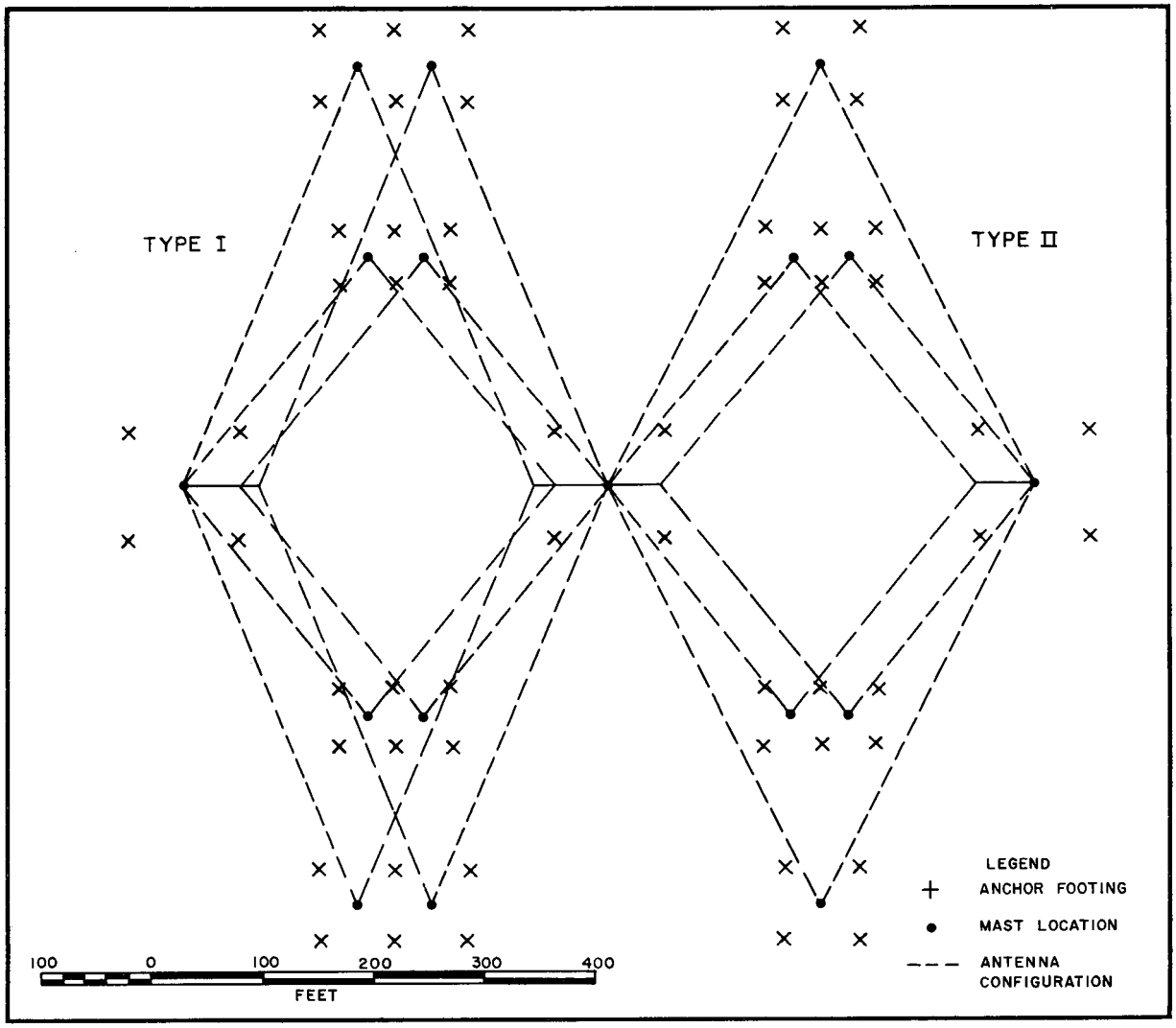


FIG.48. SUGGESTED RHOMBIC PATTERNS, STATION 49

PIC/JR-8/59

STATION 50

I. GENERAL

Station 50 is located 17.5 nm southwest of Moscow (Figure 43) and immediately north of Station 49 (Figure 44). Station 50 covers a fenced area of 306 acres (3,700 by 3,600 feet) and is served by a 25-foot-wide paved road which leads east from the Moscow/Kaluga highway. Photography of [redacted] reveals a total of 21 structures, including a control building at the terminus of the service road. Photography of [redacted] reveals at least 11 rhombic-shaped clearings in the antenna field. On [redacted] photography the antenna field is partially overgrown with low vegetation, and none of the previous rhombic-shaped clearings is visible (Figures 49 and 50). No masts are visible on the [redacted] photography.

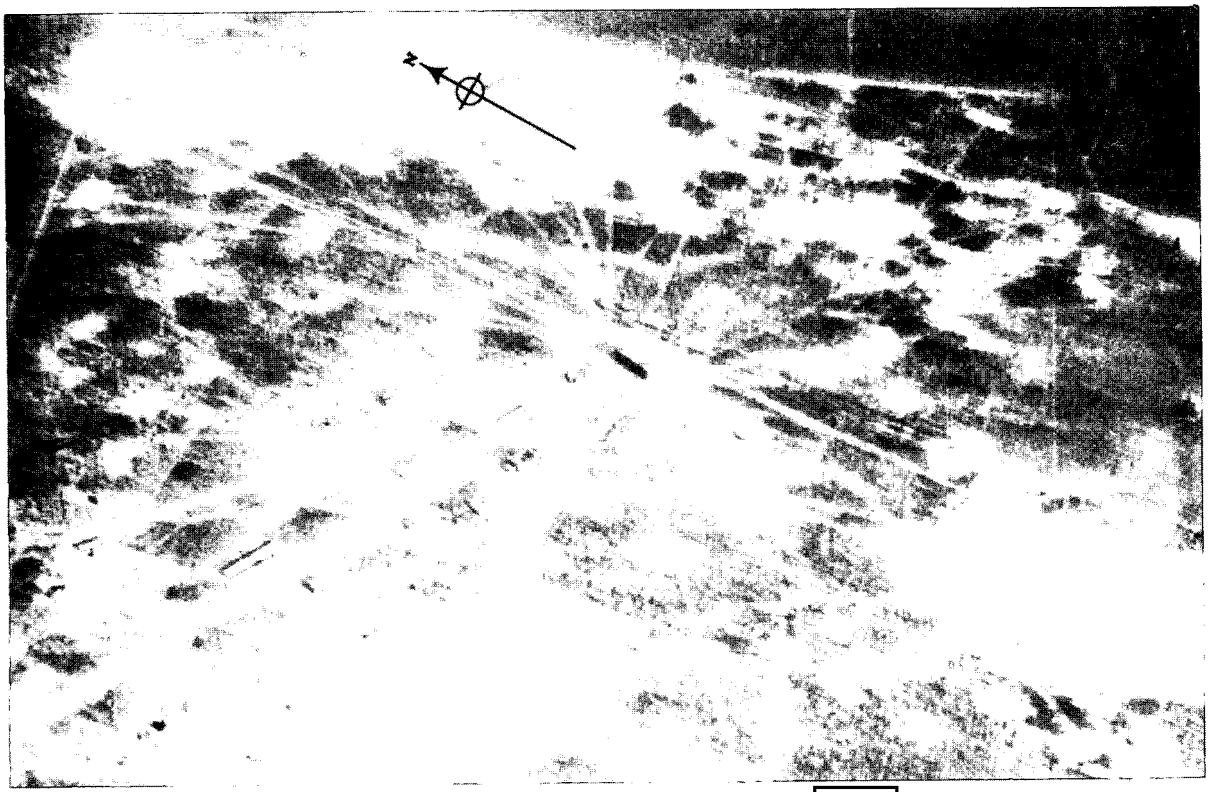


FIG. 49. OBLIQUE VIEW OF STATION 50 [redacted]

25X1

25X1

II. STRUCTURES

The structures as of [redacted] are listed in the following tabulation (item numbers are keyed to Figure 50).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building	2	Hip	135 x 65
2	Support building	1	Gable	35 x 30
3	Unidentified area	-	-	150 x 90
4	Support building	1	-	15 x 15
5	Support building	1	Gable	60 x 30
6	Support building	1	Shed	15 x 15
7	Support building	1	-	20 x 15
8	Support building	1	Gable	45 x 25
9	Support building	1 1/2	Hip	100 x 65
10	Support building	1	-	15 x 15
11	Support building	1	Gable	65 x 20
12	Security building	1	-	30 x 30
13	Building U/C	-	-	130 x 25
14	Support building	1	Gable	25 x 20
15	Athletic field	-	-	470 x 200
16	Support building	1	Hip	65 x 25
17	Support building	1	Gable	50 x 30
18	Support building	1	Gable	30 x 30
19	Unidentified area	-	-	40 x 30
20	Support building	2	Hip	100 x 65
21	Support building	1	Gable	45 x 25

25X1

III. ANTENNAS

25X1 Aerial photography of [redacted] shows 11 diamond-shaped clearings which may contain rhombic antennas, but the masts are not visible. Aerial photography of [redacted] shows that these clearings had been

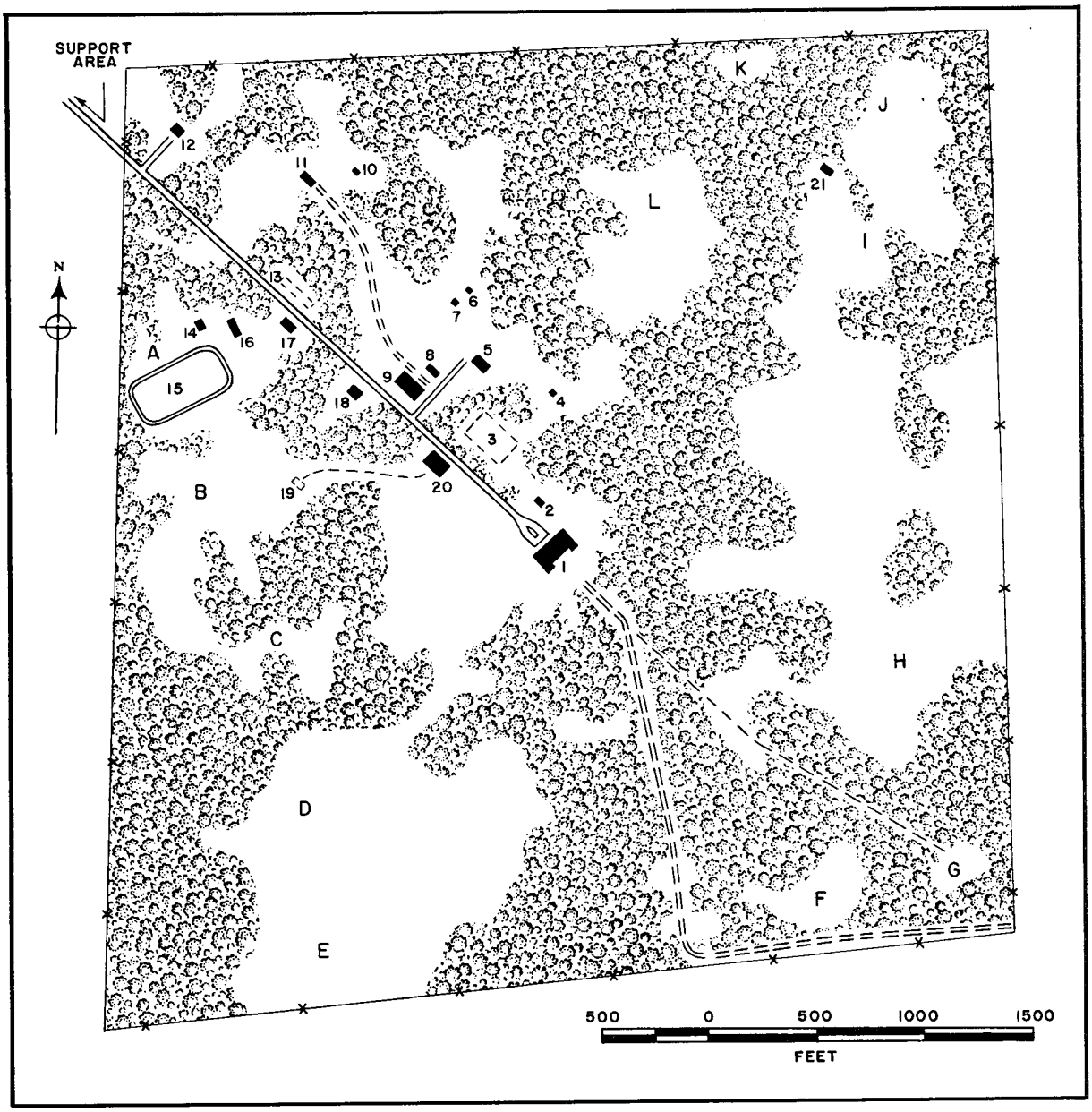


FIG. 50. LINE DRAWING OF STATION 50

25X1

overgrown since [redacted] with low vegetation, which prevents determination of the antenna pattern, although it would not interfere with operations. One of the cleared areas on this later photography (Figure 50, Item A) is an athletic field. A rectangular cleared area (Figure 50, Item G) is located near the southeast corner of the installation and is connected

25X1

to the control building by a trail, but it cannot be determined whether an antenna is located in the clearing. 25X1

The locations of the clearings as listed in the following tabulation are keyed to the item letters on Figure 50. The clearings are shown as they appear on [ ] aerial photography. The orientation of the probable rhombics and the major and minor axis dimensions are from [ ] photography. 25X1

Item Letter	Major Axis (feet)	Minor Axis (feet)	Approx. Azimuth Orientation (degrees)
B	825	430	
C	720	360	
D	720	360	
E	620	290	
F	900	540	
H	720	360	
I	720	360	
J	720	360	
K	720	360	
L	720	360	

25X1

STATION 53

I. GENERAL 25X1

Station 53 (Figure 51) is located 17.5 nm southwest of Moscow and 100 feet east of Station 50 (Figures 43 and 44). Station 53 covers a fenced area of 129 acres (2,450 by 2,300 feet) and is served by a 25-foot-wide paved road from the Moscow/Kaluga highway. The station was constructed between [ ] There are four structures in the area, one of which is a control building. In [ ] the area was covered by timber, but after [ ]

25X1 25X1

25X1

25X1

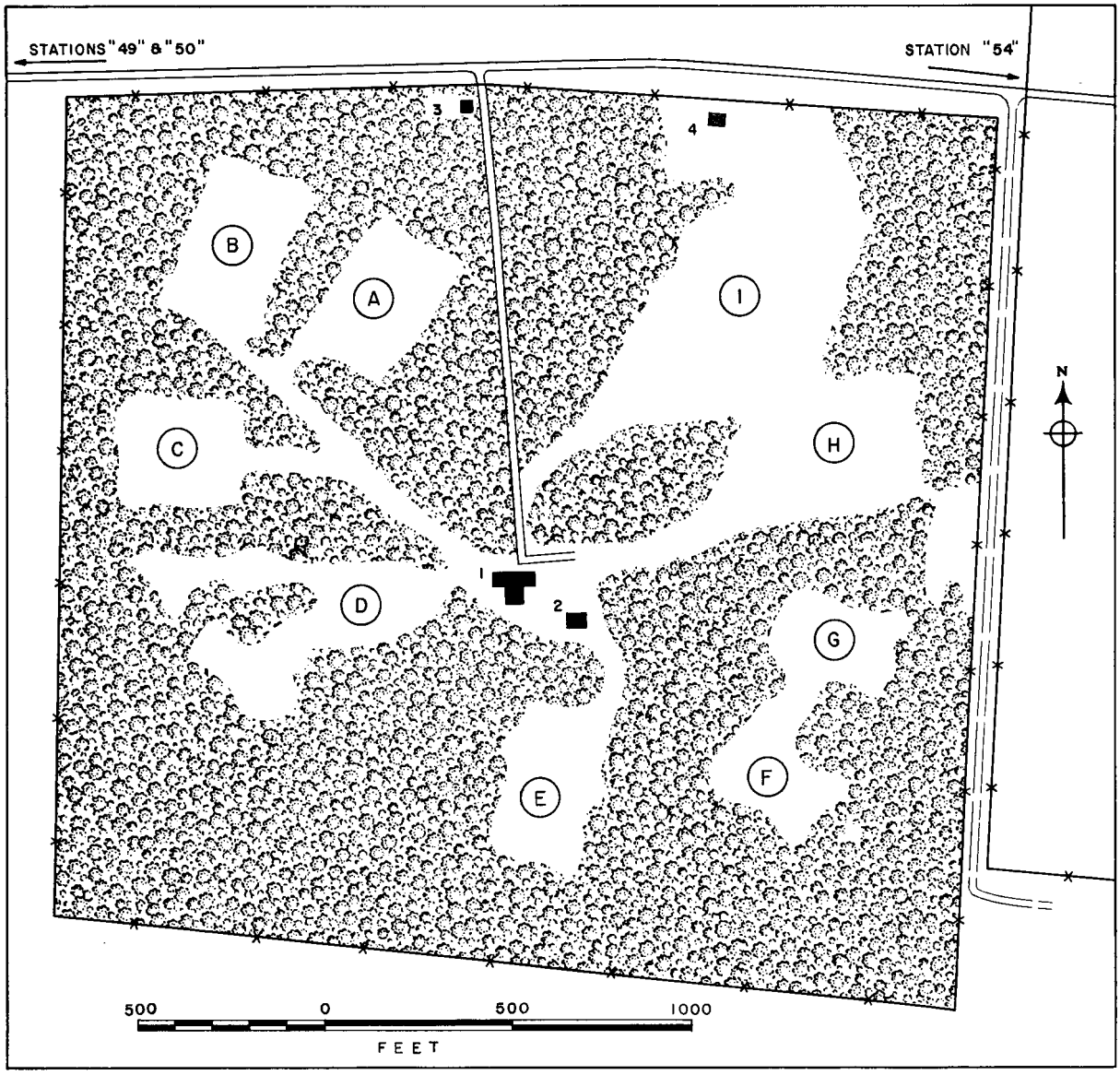


FIG. 51. LINE DRAWING OF STATION 53

clearings were made for antennas and feed lines. There are seven rectangular-shaped clearings which appear to be for fishbone-type antennas.

II. STRUCTURES

The structures as of [redacted] are listed in the following tabulation (item numbers are keyed to Figure 51).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building, T-shaped	1	Hip	100 x 35 (main) 45 x 35 (wing)
2	Support building	1	Hip	35 x 35
3	Guardhouse	1	Gable	25 x 20
4	Support building	1	Gable	35 x 25

25X1

III. ANTENNAS

The rectangular clearings shown on Figure 51 may be the locations of fishbone-type antennas, but the masts are not visible. Two other clearings (Figure 51, items D and I) have apparent feed line clearings leading to the control building, but the type of antenna that may be located in these clearings cannot be determined. The fishbone-type antenna clearings as of [redacted] are listed in the following tabulation (item letters are keyed to Figure 51).

Item Letter	Clearing Length (feet)	Clearing Width (feet)	Approx. Azimuth Orientation (Degrees)
A	430	265	[redacted]
B	430	265	
C	350	300	
E	430	265	
F	285	230	
G	365	265	
H	660	315	

25X1

STATION 54

I. GENERAL

Station 54 (Figure 52) is located 17 nm southwest of Moscow, adjacent to Station 53 (Figures 43 and 44). Station 54 covers a fenced area of 272

acres (3,700 by 3,200 feet) and is served by the same paved road that serves Station 53. Station 54 contains numerous structures, including a control building. There was an increase in the number of structures from 25X1 to 25X1 as shown by the photography of those years, but the antenna field was relatively unchanged. There are seven rectangular-shaped clearings which appear to be for fishbone-type antennas, and there are six larger cleared

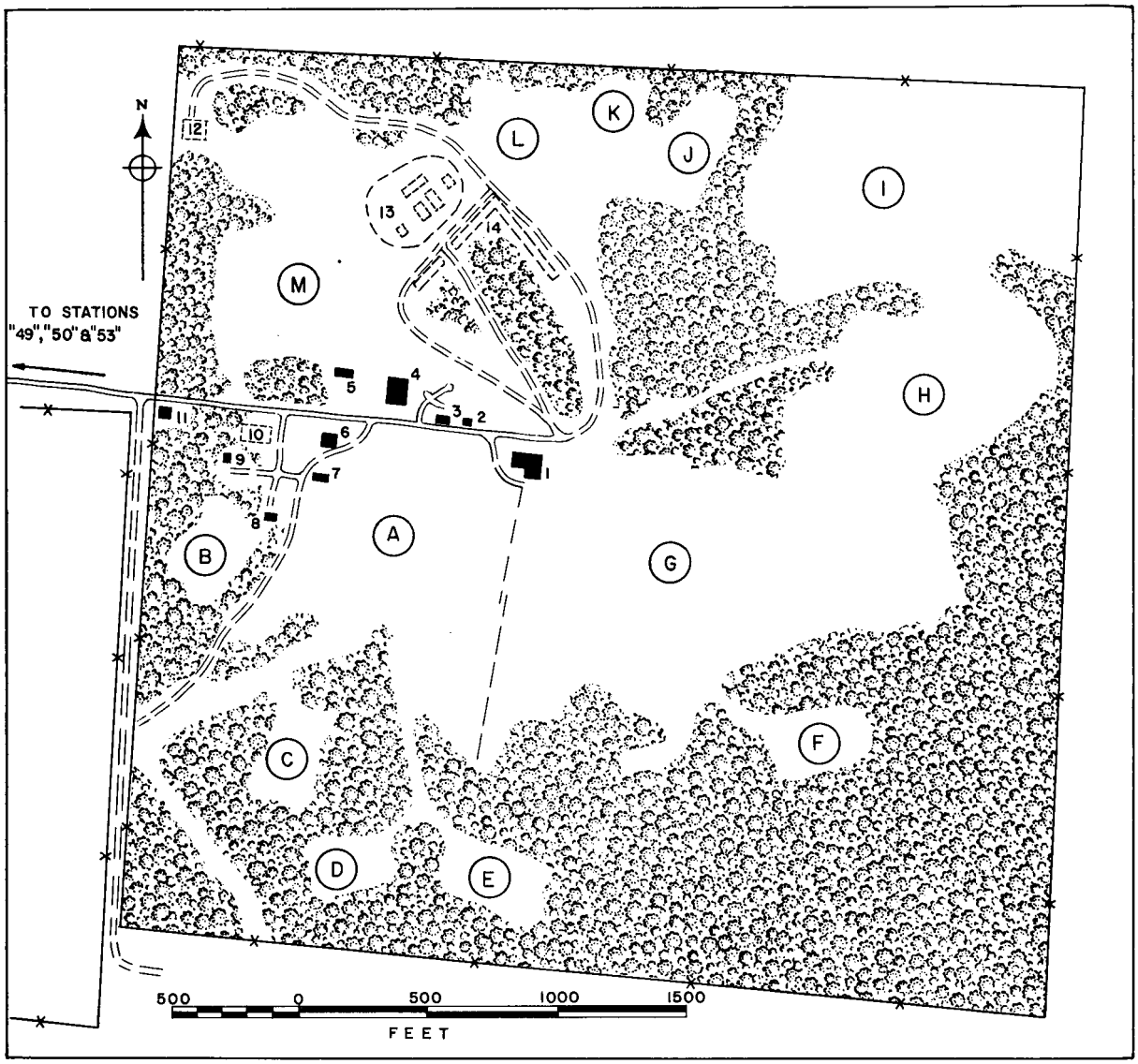


FIG. 52. LINE DRAWING OF STATION 54

areas which may contain additional antennas, the types of which cannot be determined.

II. STRUCTURES

The structures as of [redacted] are listed in the following tabulation (item numbers are keyed to Figure 52).

25X1

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building, L-shaped	2	Hip	100 x 50 (main) 50 x 35 (wing)
2	Support building	1	Gable	15 x 15
3	Support building	1	Gable	30 x 20
4	Building U/C	-	-	100 x 65
5	Support building	1	Gable	45 x 20
6	Support building	1	Gable	35 x 35
7	Support building	1	Gable	40 x 20
8	Support building	1	-	30 x 25
9	Support building	1	Gable	25 x 15
10	Building U/C	-	-	35 x 35
11	Guardhouse	1	Hip	30 x 30
12	Unidentified area	-	-	50 x 40
13	Possible athletic field	-	-	370 x 260
14	Tent area (20 tents)	-	-	-

III. ANTENNAS

There are seven rectangular clearings within the partially wooded antenna field which may be the locations of fishbone-type antennas. There are six larger cleared areas in the antenna field which may contain many more antennas, but no masts are visible. The antenna field pattern remained almost unchanged from [redacted]

The fishbone-type antenna clearings as of [redacted] are listed in the following tabulation (item letters are keyed to Figure 52).

25X1

25X1

25X1

25X1

PIC/JR-8/59

Item Letter	Clearing Length (feet)	Clearing Width (feet)	Approx. Azimuth Orientation (Degrees)
B	400	230	
C	400	230	
D	400	230	
E	430	230	
F	400	230	
J	400	230	
K	400	135	

25X1

PHOTO DATA:

25X1

MAP DATA:

ATMP 4-100. (S)

25X1 AMS Series N 501, NN 37-1

25X1

PIC/JR-8/59

COORDINATES: 55°29'N/37°20'E - 37UCB955505 (Station 49)
55°30'N/37°21'E - 37UCB961514 (Station 50)
55°30'N/37°22'E - 37UCB973520 (Station 53)
55°30'N/37°23'E - 37UCB982520 (Station 54)

25X1

25X1

25X1

NUMBER 57

KOMMUNARKA ANTENNA FARM

I. GENERAL

Kommunarka Antenna farm is located 12 nautical miles (nm) south-southwest of Moscow, 3 nm west-northwest of Butovo, and adjacent to the Kommunarka Collective Farm (Figure 53). The antenna farm is enclosed by a fence and covers 30 acres. Aerial photography of [redacted] shows 25X1 that a control building and four support-type buildings are the major structures within the area. No masts or towers can be identified because of the poor resolution and small scale of the photography.

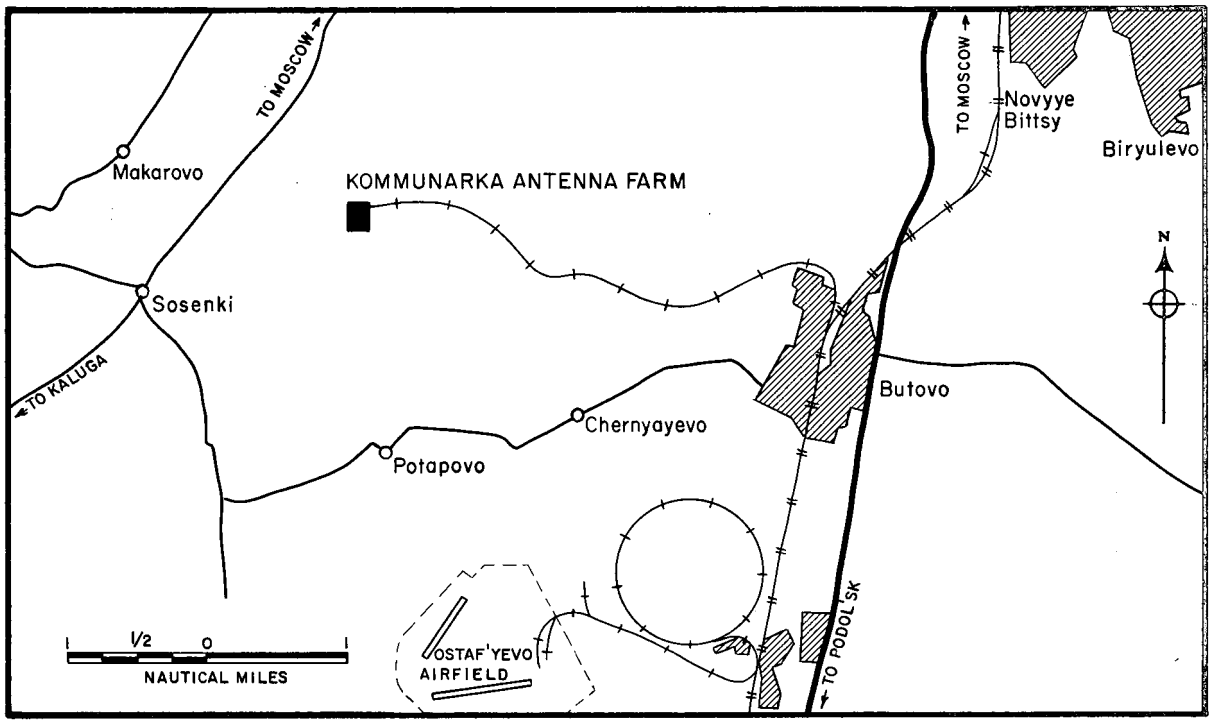


FIG. 53. LOCATION MAP

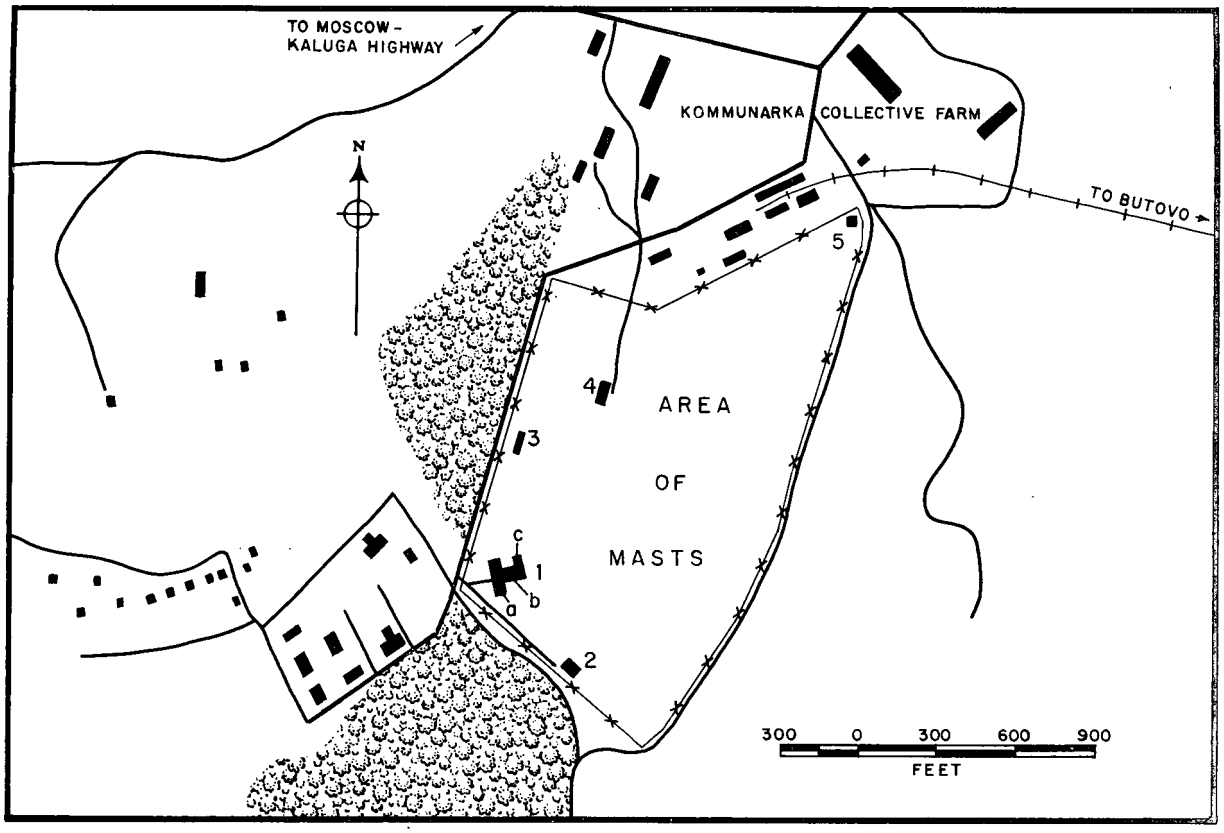


FIG.54. LINE DRAWING OF KOMMUNARKA ANTENNA FARM

25X1

II. STRUCTURES

The following is a tabulation of the structures within the area as of [redacted] (item numbers are keyed to Figure 54).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building	2 or 3	Valley	-
1a	Base	2 or 3	-	145 x 35
1b	Stem	2 or 3	-	70 x 45
1c	Wing	2 or 3	-	25 x 25
2	Support-type building	2 or 3	Hip or gable	70 x 45
3	Support-type building	2 or 3	Hip or gable	70 x 45
4	Support-type building	2 or 3	Hip or gable	70 x 45
5	Support-type building	2 or 3	Hip or gable	45 x 45

25X1

25X1

PIC/JR-8/59

III. ANTENNAS

25X1

The [redacted] aerial coverage reveals no antenna patterns, but

[redacted]

[redacted]

25X1

MAP DATA:

25X1 ATMP [redacted] 4-100. (S)

[redacted]

COORDINATES: 55°34' N/37°28'E
37UDB045605

25X1

PIC/JR-8/59

25X1

NUMBER 58

TEPLYY STAN ANTENNA FARM

25X1 25X1

I. GENERAL

Teplyy Stan Antenna Farm, covering approximately 170 acres, is located 8.5 nautical miles south-southeast of Moscow at the 19 kilometer mark and on the east side of the Moscow/Kaluga highway (Figure 55). The antenna farm can be identified on [redacted] aerial photography and on 1957 ground photography. Owing to poor resolution, only major structures can be identified on the [redacted] aerial photography; however, numerous stick masts can be identified on 1957 ground photography. The absence of cooling facilities and the existence of a fishbone receiving antenna indicate that this is a probable receiving station.

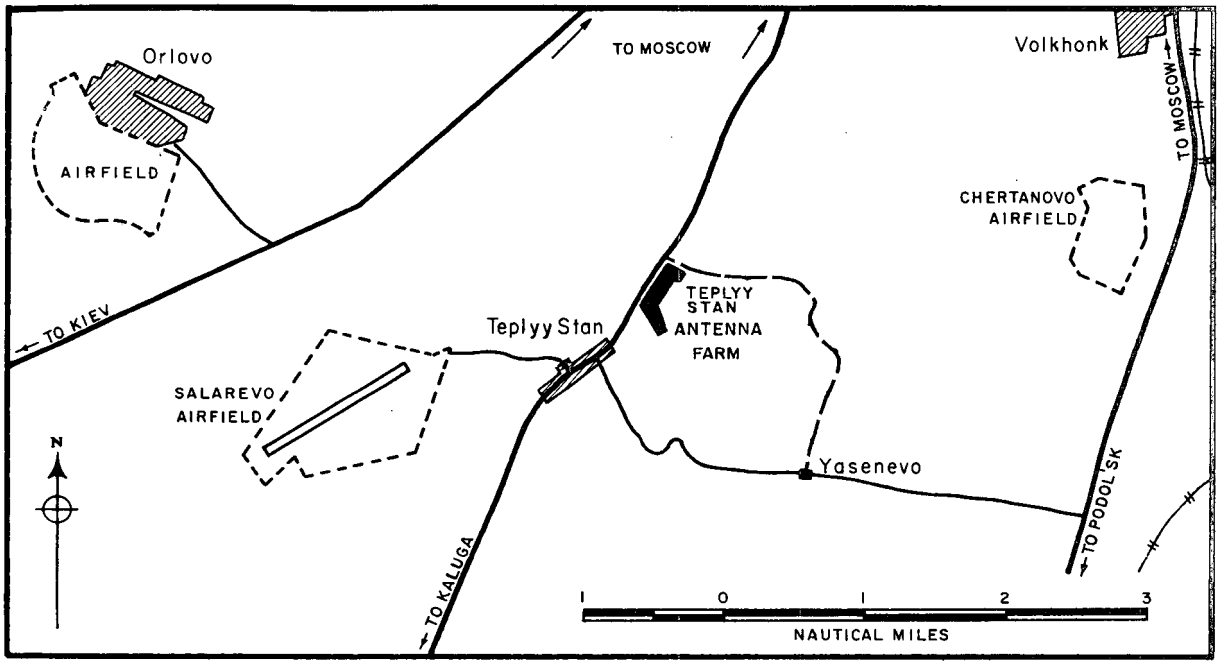


FIG. 55. LOCATION MAP

25X1

25X1

II. STRUCTURES

The following is a tabulation of the more prominent structures identified in this area on [ ] photography (item numbers are keyed to Figure 56). No control building can be identified and no cooling facilities are noted. Structurally, the area seems to have undergone almost a total change since the [ ] aerial photography.

25X1

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Barracks or administration building	2	Hip	70 x 50
2	Barracks or administration building	2	Hip	70 x 50
3	Unidentified	1	-	30 x 30
4	Unidentified	1	Gable	50 x 30
5	Six possible housing units	1	-	25 x 25
6	Unidentified	1	-	20 x 20
7	Barracks or administration building	2	Hip	70 x 50
8	Barracks or administration building	2	Hip	70 x 50
9	Unidentified	-	-	-
10	Unidentified	-	-	-
11	Unidentified	-	-	-
12	Guardhouse	1	-	10 x 10

III. ANTENNAS

At least 110 stick masts can be identified on 1957 ground photography (Figure 57). All poles appear to be approximately 40 feet high, except one which is 80 feet high. A portion of at least one 5-3-3-5 fishbone-type antenna can be identified (Figure 58). At least one horizontal cage-type antenna can also be identified. A count made on [ ] aerial photography reveals approximately 25 poles; thus, a considerable change in antenna configurations had been made since [ ]

25X1

25X1

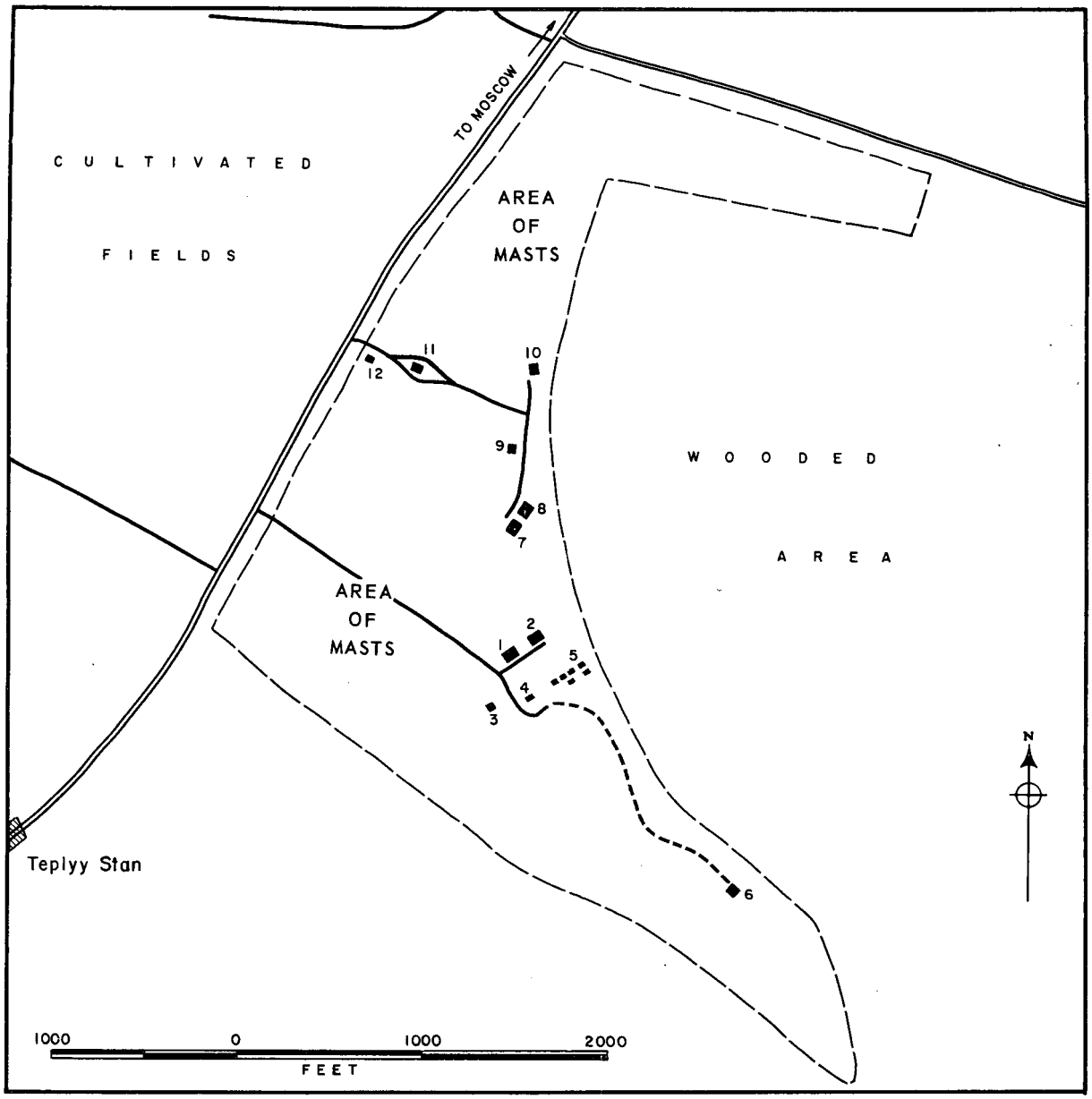


FIG. 56. LINE DRAWING OF TEPLYY STAN ANTENNA FARM

IV. OVERHEAD POWER AND/OR COMMUNICATIONS LINES

Figure 57 shows a multiwire telephone or telegraph line and a power line paralleling the Moscow/Kaluga highway in front of the radio station. Although not visible, a connection probably exists between the site and these facilities.

25X1

25X1

FIG.57. TEPLYY STAN ANTENNA FARM Over-all view of antenna farm along Moscow/Kaluga highway. Note power and communication lines along road. (1957)

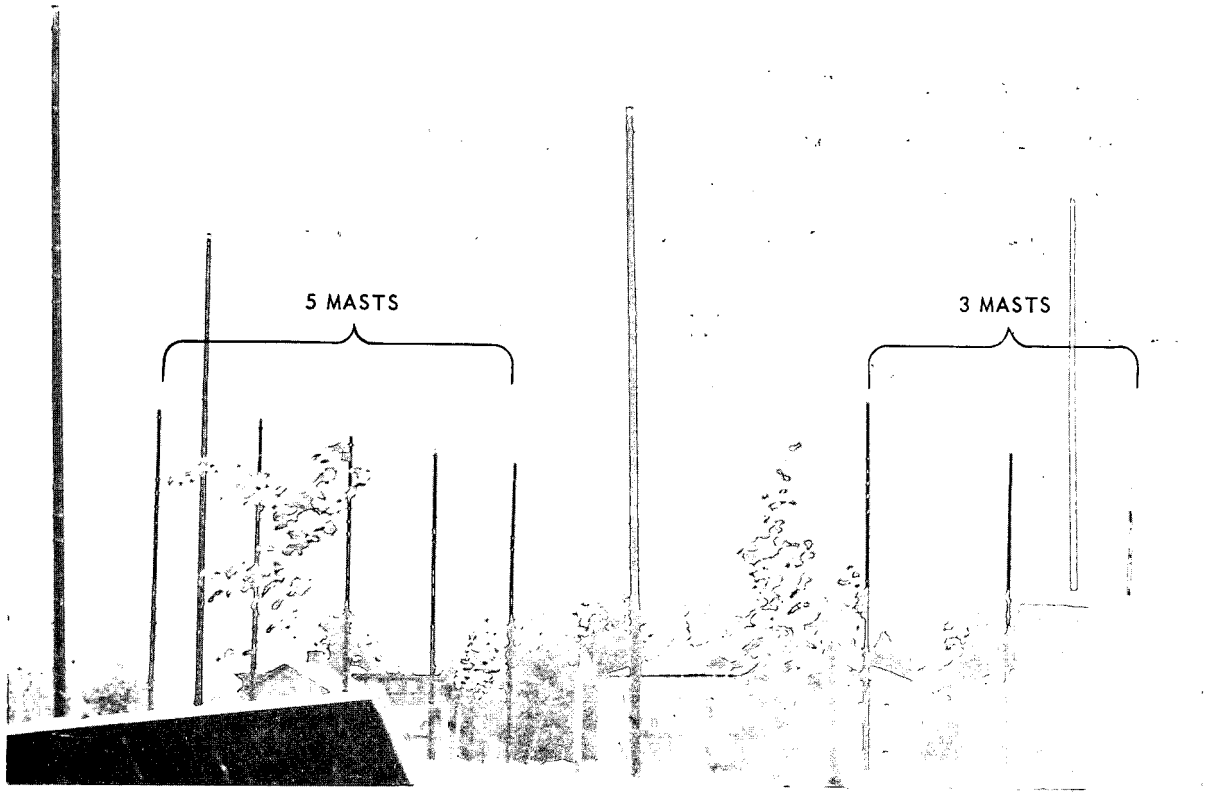


FIG.58. TEPLYY STAN ANTENNA FARM An example of a portion of a Fishbone antenna arranged in a 5-3-3-5 pattern. (1957)

PIC/JR-8/59

25X1

25X1

MAP DATA:

ATMP 4-100.(S)
13-25MA, Item 13-27. (S)
14-25MA, Item 14-2. (S)

25X1

COORDINATES: 55°37' N/37°31'E
37UDB061637

25X1

25X1

NUMBER 59

VORONTSOVO ANTENNA FARM

I. GENERAL

Vorontsovo Antenna Farm is located 6.5 nautical miles (nm) southwest of Moscow between the Moscow/Kaluga and Moscow/Kiev highways and less than one nm west of Vorontsovo (Figure 59). This antenna farm, situated immediately adjacent to a military area, is enclosed by a

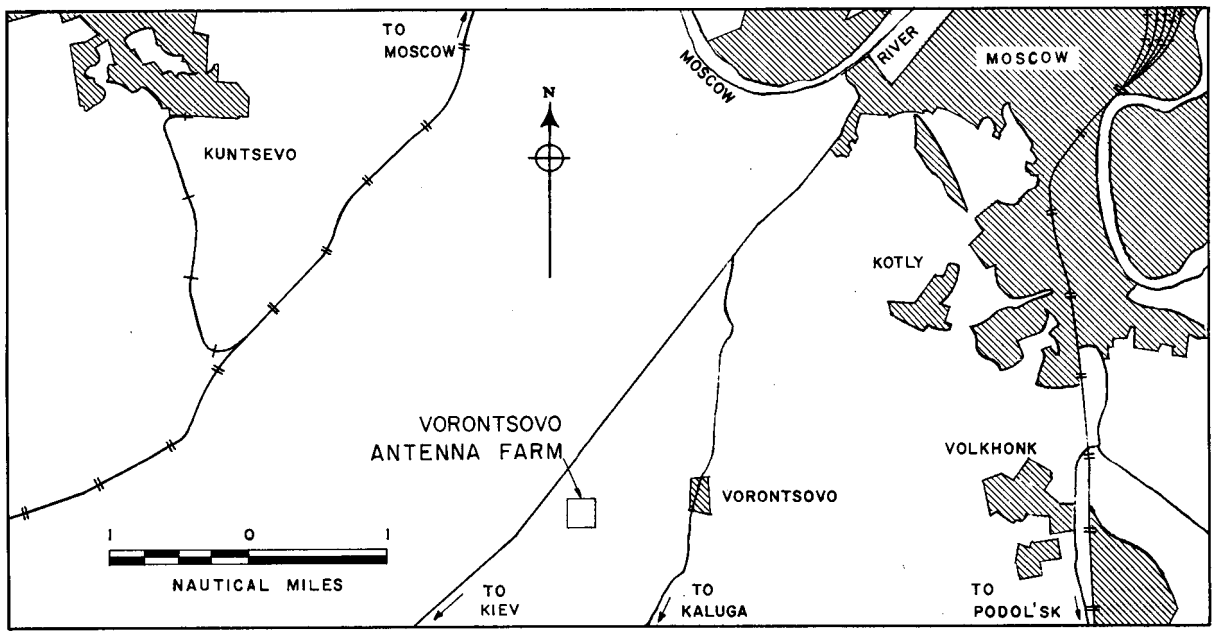


FIG.59. LOCATION MAP

25X1 fence, is road-served, and covers approximately 78 acres. Aerial photography of [redacted] (Figure 62) and ground photography of 1955-56 show that this farm had been enlarged since [redacted] and that as of [redacted] it included two control buildings, each with an adjacent cooling pond, six support buildings, and probable rhombic and horizontal cage-type antennas (Figure 60). 25X1

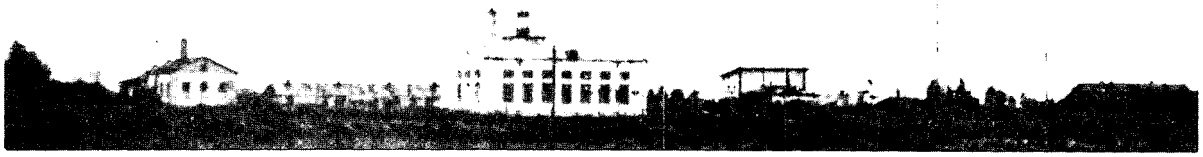


FIG. 60. VORONTSOVO ANTENNA FARM View of one control building with support buildings (1951) 25X1

II. STRUCTURES

The following is a tabulation of the structures within the area as of [redacted] (item numbers are keyed to Figure 61).

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Control building	2 or 3	Complex	[redacted]
2	Support building	1 or 2	Gable	
3	Support building	1 or 2	-	
4	Support building	-	-	30 x 30
5	Support building	2	-	45 x 45
6	Support building	2	Gable	65 x 45
7	Guardhouse	1 or 2	-	20 x 20
8	Unidentified	1 or 2	-	[redacted]
9	Guardhouse	1 or 2	Gable	30 x 20
10	Unidentified	-	-	50 x 40
11	Unidentified	1 or 2	Gable	55 x 25
12	Control building	1 and 2	Gable	100 x 50
13	Cooling pond	-	-	35 dia.
14	Cooling pond	-	-	35 dia.
15	Support building	1 or 2	Gable	100 x 30

25X1

25X1

PIC/JR-8/59

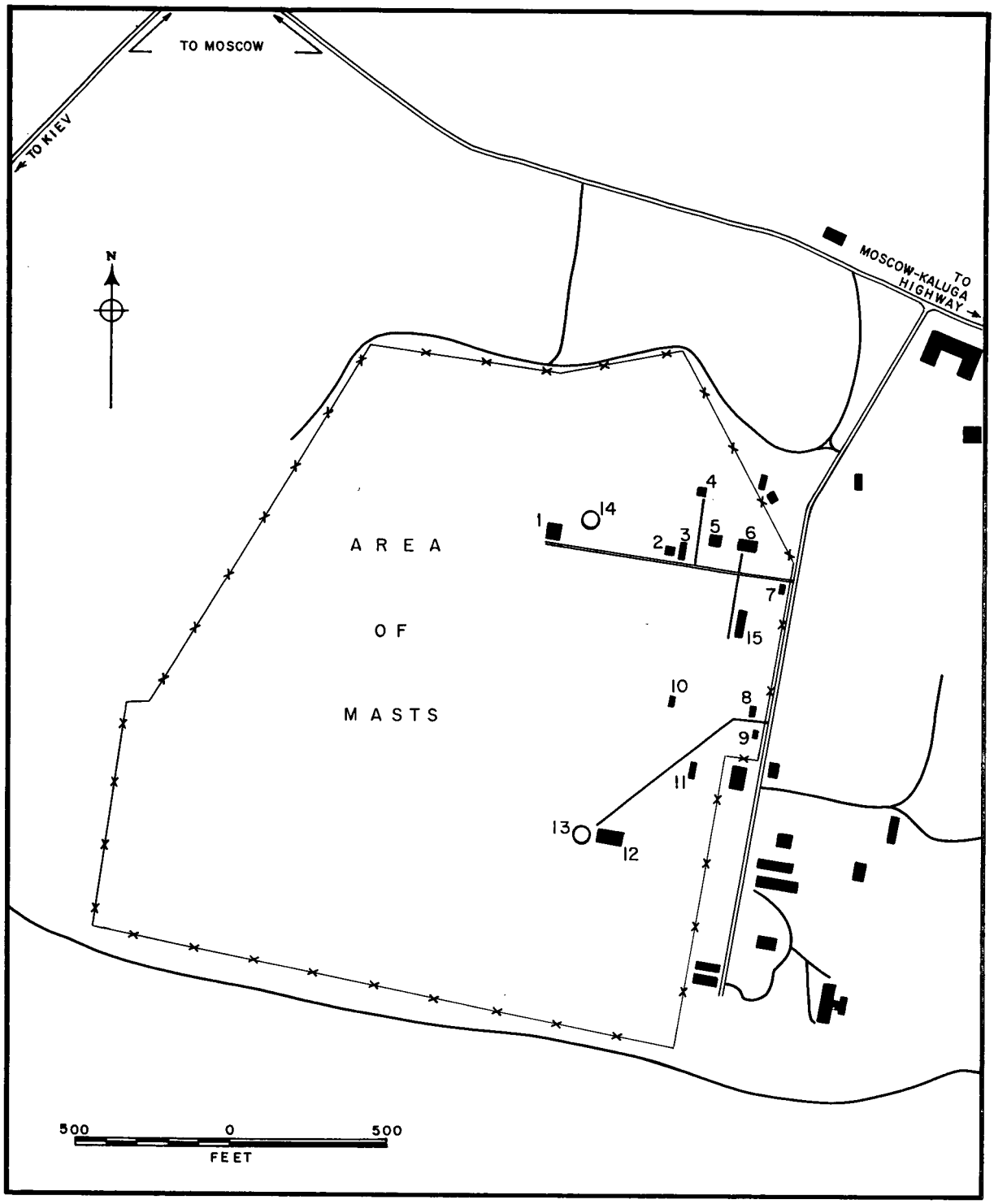


FIG. 61. LINE DRAWING OF VORONTSOVO ANTENNA FARM

25X1

PIC/JR-8/59 25X1

FIG. 62. VORONTSOVO ANTENNA FARM [redacted]

25X1

PIC/JR-8/59

FIG. 63. VORONTSOVO ANTENNA FARM Near view showing approximately 35 guyed stick masts (1957)

III. ANTENNAS

25X

but because of poor resolution antenna types or antenna patterns cannot be identified on the aerial photography. Ground photography of 1955-57 shows approximately 100 guyed stick masts (Figure 63). Horizontal cage antennas are extended between some masts, and the position of other masts indicates probable rhombic antenna patterns, some of which are of the double-end-pole type.

25X1
25X1
25X1

PHOTO DATA:

PIC/JR-8/59

25X1

25X1

25X1

MAP DATA:

ATMP -4-100. (S)

25X1 -13-25MA, Item 13-14A. (S)

COORDINATES: 55°39'N/37°31'E
37UDB071691

25X1

NUMBER 62

TOLSTOPALTSEVO ANTENNA FARM

I. GENERAL

Tolstopaltsevo Antenna Farm is located 16 nautical miles (nm) west-southwest of Moscow and 2.5 nm west-northwest of Vnukovo Airfield (Figure 64). The area is probably enclosed by a fence and contains approximately 86 acres (2,500 by 1,500 feet). A comparison of [ ] and [ ] aerial photography shows that since [ ] the antenna farm had more than doubled in size and consisted as of [ ] of a control building, a guardhouse, and two possible support-type buildings (Figure 65). 25X1 25X1 25X1 25X1

25X1

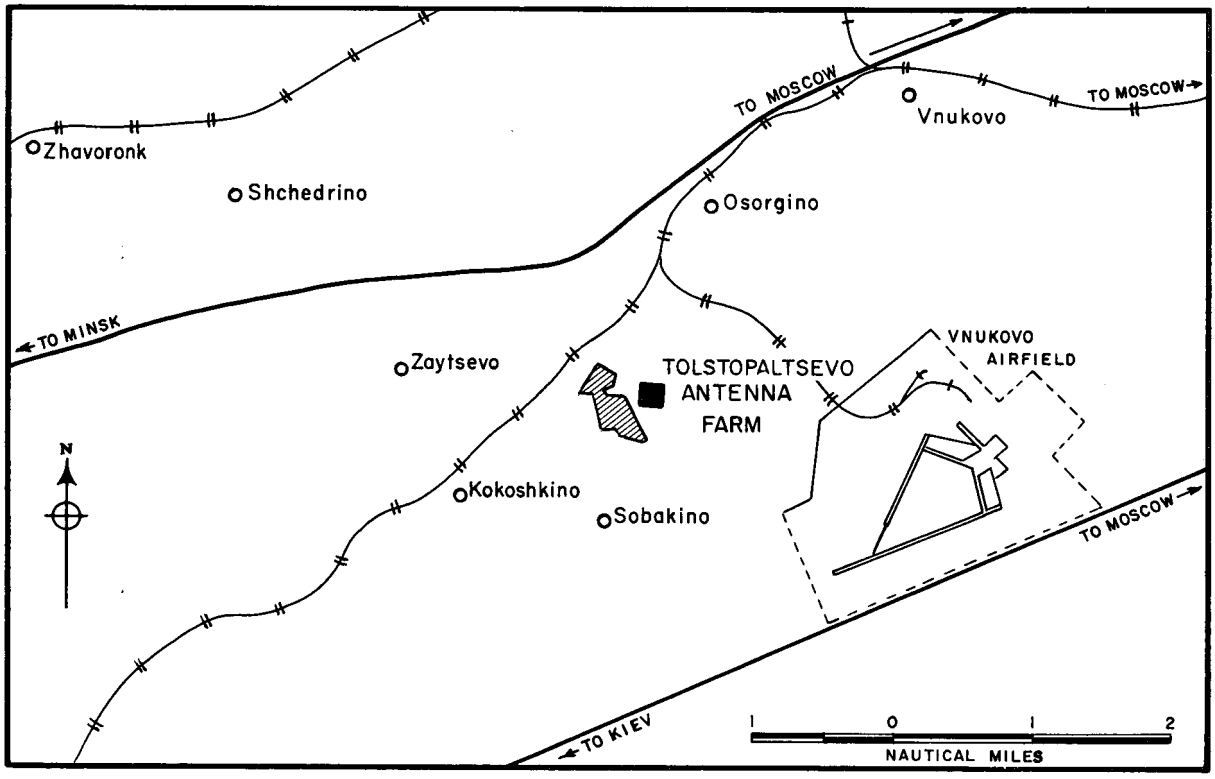


FIG. 64. LOCATION MAP

25X1 FIG. 65. TOLSTOPALTSEVO ANTENNA FARM (25X1

II. STRUCTURES

The following is a tabulation of the structures within the area as of (item numbers are keyed to Figure 66).

Item No.	Identification	Stories	Roof Type	Approx. Dimensions (feet)
1	Control building	-	-	55 x 45
2	Guardhouse	1	Shed	15 x 15
3	Possible support-type building	1	Gable	40 x 20
4	Possible support-type building	1	-	30 x 20

III. ANTENNAS

There are at least 14 masts within the area. They cannot be seen on aerial photography, but their existence is indicated by the characteristic pattern made by the mast base and four guy-wire anchor bases. It has been reported that the area contains at least 10 tall steel masts and 15-20 short masts.

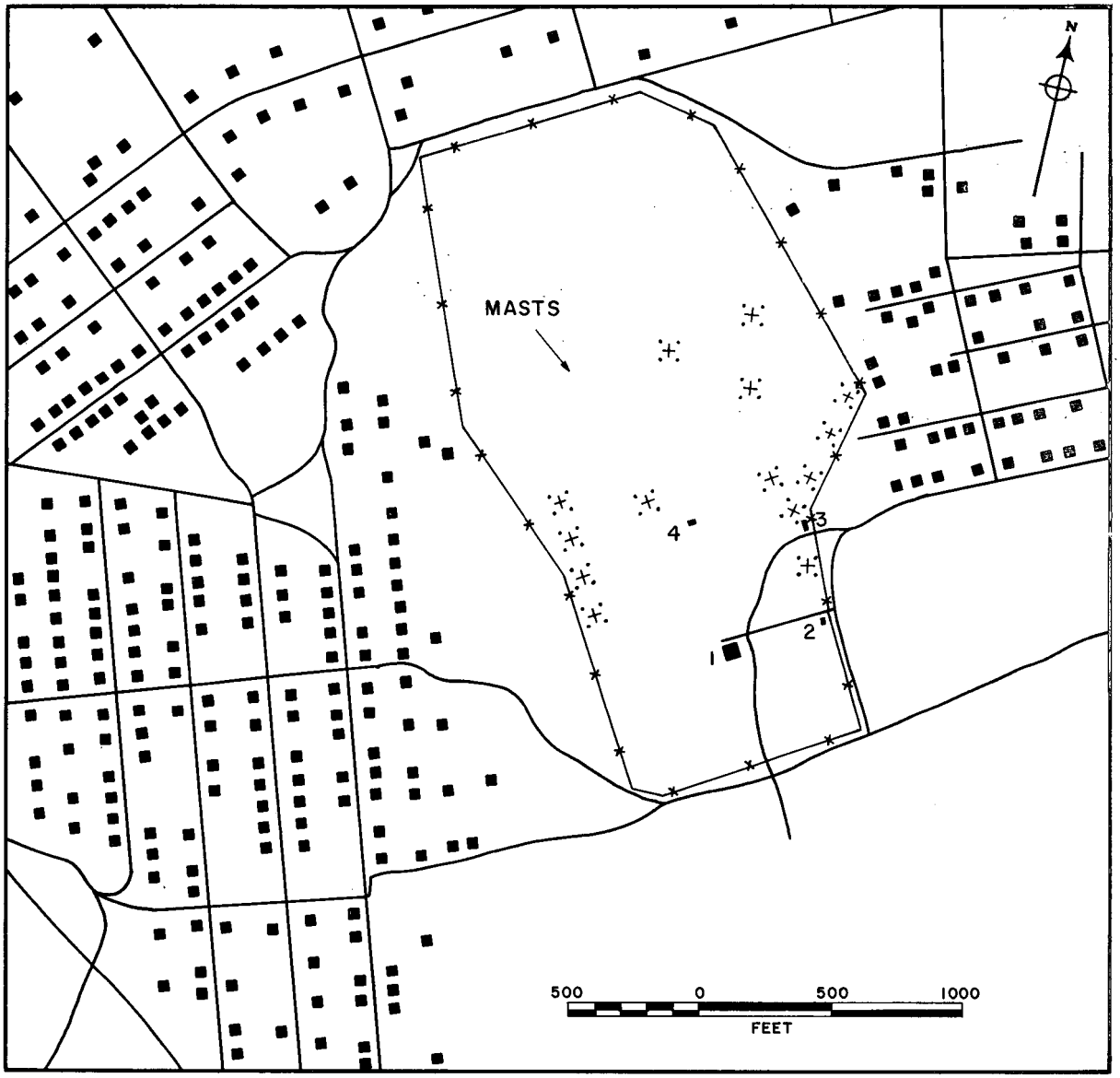


FIG. 66. LINE DRAWING OF TOLSTOPALTSEVO ANTENNA FARM

25X1
[redacted]
25X1

PIC/JR-8/59

PHOTO DATA 25X1

Aerial Photography

25X1 [redacted]

MAP DATA:

ATMP [redacted]-4-100. (S)

[redacted]

COORDINATES: 55°36'N/37°13'E
37UCB865635

25X1

25X1

25X1

[redacted]

NUMBER 67

CHERNEVO RADIO STATION

I. GENERAL

Chernevo Radio Station is located just south of the Moscow/Istra highway at a point 12.5 nautical miles (nm) west of Moscow and 0.5 nm west of Chernevo (Figure 67). The station is fenced and covers approximately 25 acres. Aerial photography of [redacted] and ground photography of 1953 show this site to contain approximately 20 buildings and 4 stick masts. 25X1

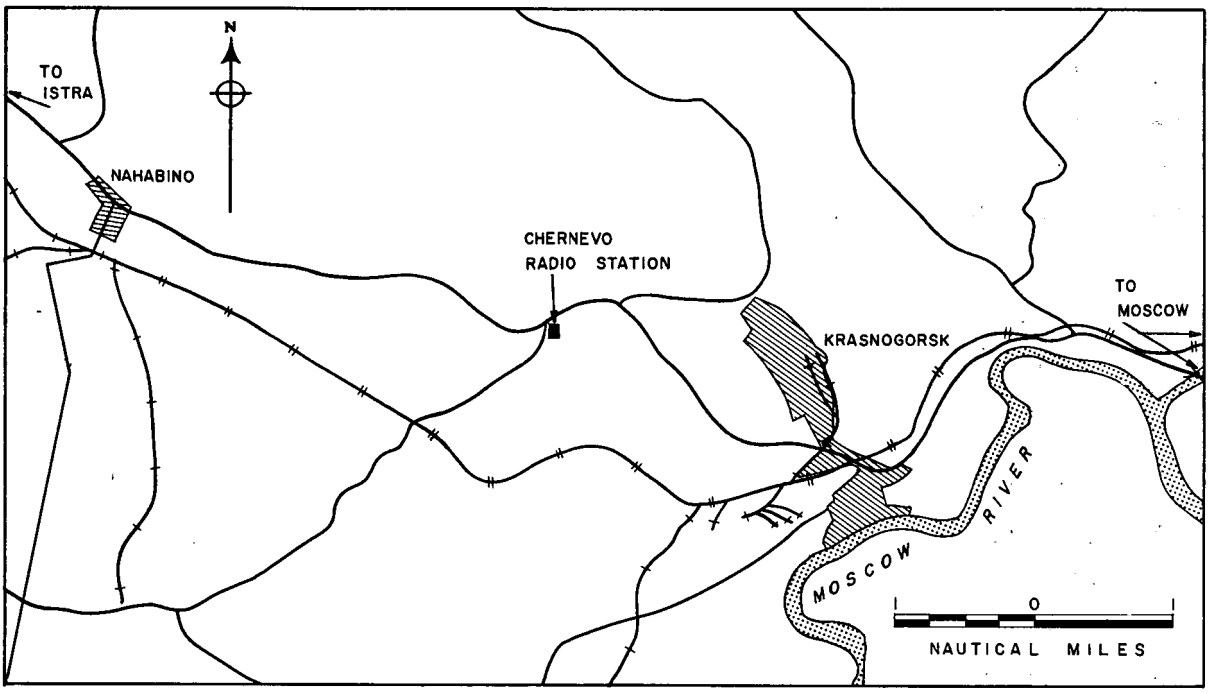


FIG. 67. LOCATION MAP

II. STRUCTURES

The poor resolution and partial cloud cover of the [redacted] photography prohibit the positive identification of some structures. These structures, 25X1

although measured, are identified only as possible buildings. The following is a tabulation of the more prominent structures within the area as of [redacted] item numbers are keyed to Figure 68).

Item No.	Identification	Stories	Roof Type	Approx. Dimensions (feet)
1	Administration-type building	-	-	210 x 90 (over-all)
2	Barracks-type building	2 1/2	Hip	135 x 90 (over-all)
3	Dwelling	1	Gable	40 x 20
4-9	Dwellings	1	Gable	40 x 20
10	Building (T-shape)	-	-	165 x 55 (main) 55 x 40 (wing)
11	Building (T-shape)	-	-	145 x 40 (main) 50 x 40 (wing)
12	Building (L-shape)	-	-	55 x 35 (main) 35 x 15 (wing)
13	Building	-	-	145 x 60
14	Unidentified area	-	-	145 x 60 (approx)
15	Building	-	-	70 x 35
16	Possible building	-	-	55 x 45
17	Possible building	-	-	70 x 35
18	Building	-	-	70 x 35
19	Possible building (L-shape)	-	-	70 x 35 (main) 40 x 35 (wing)
20	Building	-	Hip	65 x 65
21	Possible building	-	-	55 x 45
22	Building	-	-	55 x 40
23	Unidentified area	-	-	60 x 50
24	Unidentified area	-	-	100 x 90
25	Unidentified area	-	-	110 x 90

25X1

III. ANTENNAS

No antennas are visible on the [redacted] aerial photography. Ground photography of 1957-58 shows four guyed stick masts which support

25X1

vertical cage dipoles, a guyed lattice tower supporting two microwave horns, and a self-supporting lattice tower probably for triangulation (Figures 69 and 70). All these items are in the northeastern part of the area.

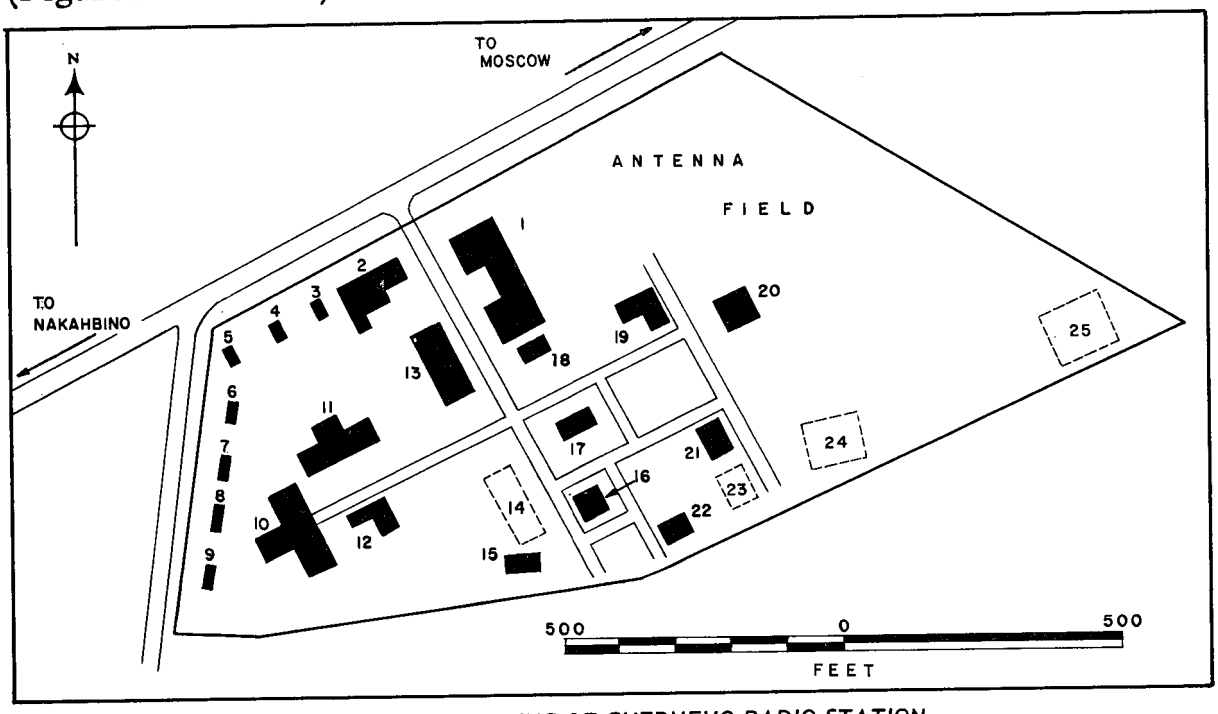


FIG. 68. LINE DRAWING OF CHERNEVO RADIO STATION

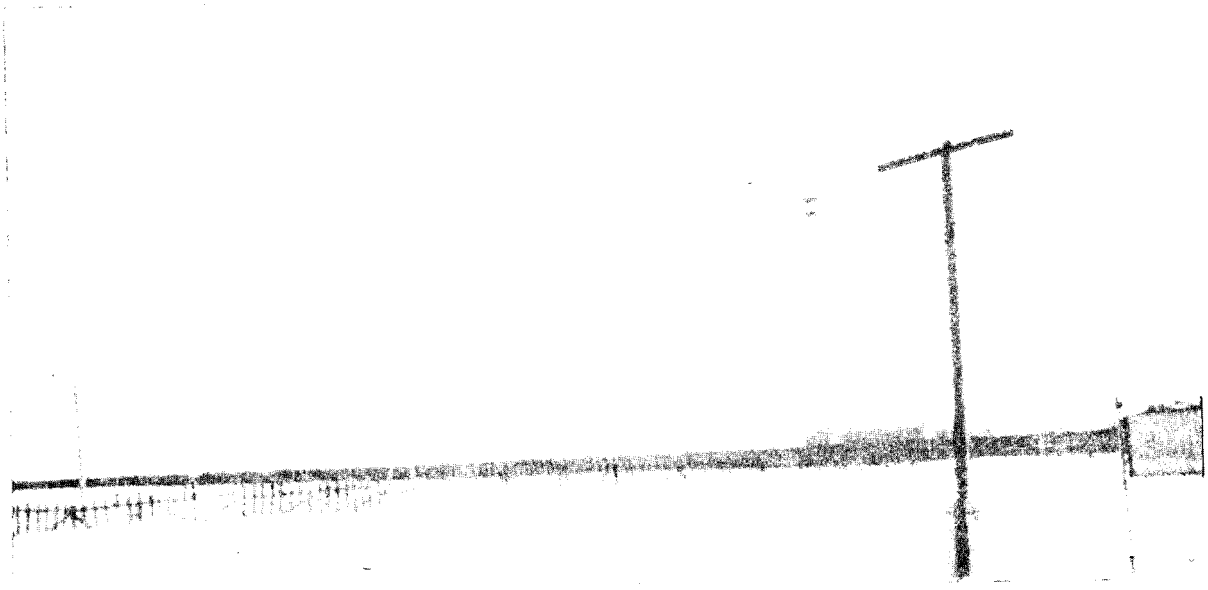


FIG. 69. CHERNEVO RADIO STATION Near view showing four guyed stick masts (1953)

PIC/JR-8/59 25X1

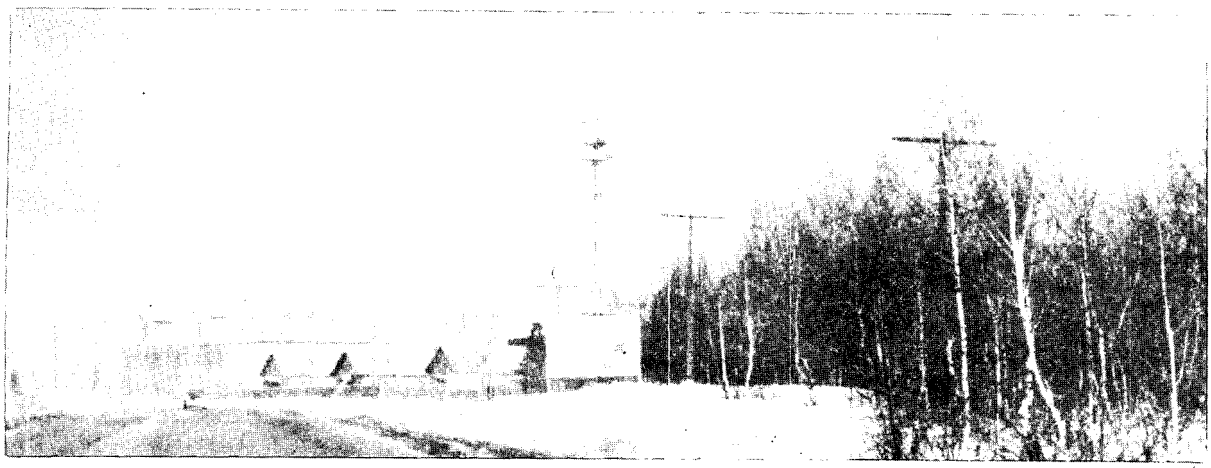


FIG 70. CHERNEVO RADIO STATION View of the buildings and a lattice tower supporting two microwave horns (1953)

25X1 [redacted]

25X1

MAP DATA:

25X1 ATMP [redacted]-1-100. (S)

[redacted]

25X1

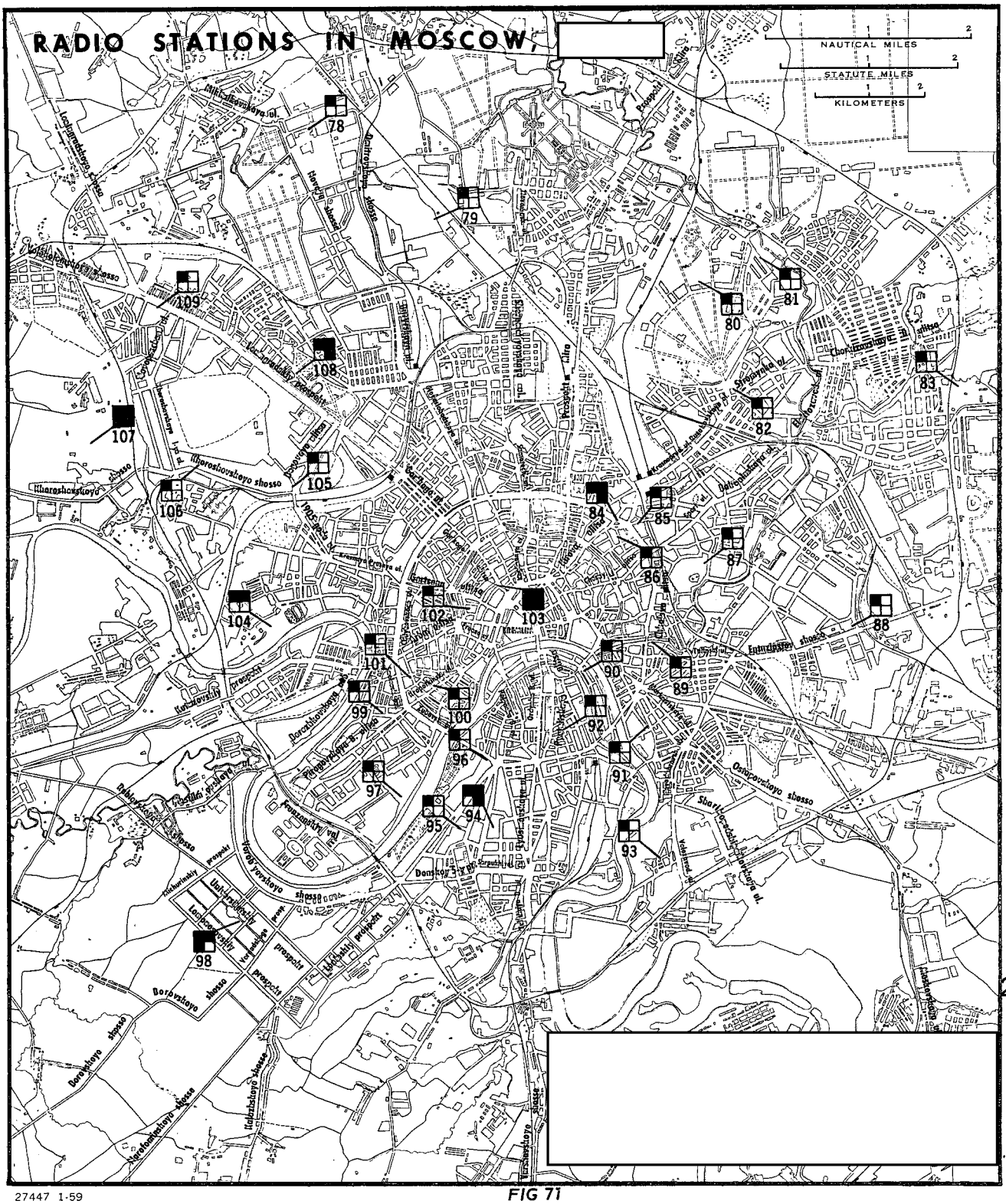
COORDINATES: 55°50'N/37°17'E
37UCB922889

25X1

TOP SECRET [redacted]

25X1

PIC/JR-8/59 25X1



25X1

27447 1-59

FIG 71

25X1 25X1

TOP SECRET [redacted]

PIC/JR-8/59

25X1

NUMBER 89

MOSCOW RADIO STATION

I. GENERAL

Moscow Radio Station (No. 89) is located approximately one nautical mile east of the Kremlin near the corner of Chkalova Ulitsa and Nikoloyamsk Nab (Figure 72). The site can be identified on aerial photography, but no towers or masts exist. Ground photography of 1956-57 25X1

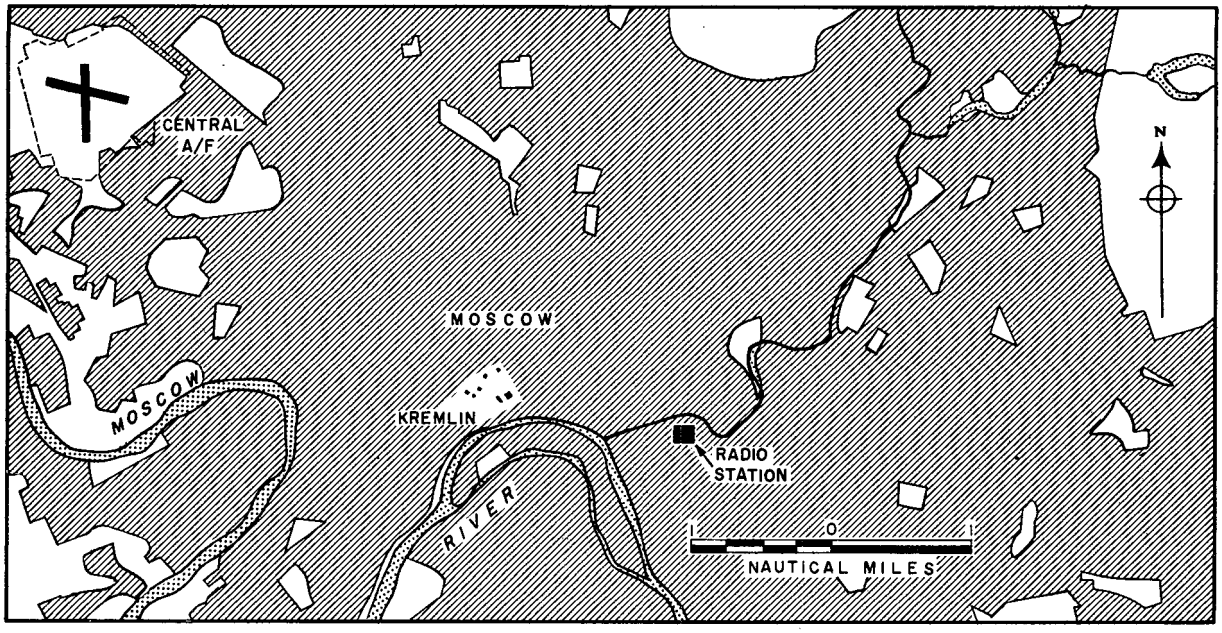


FIG 72. LOCATION MAP

shows that the area is fenced and contains three self-supporting steel towers reportedly 250 feet high and one guyed steel tower reportedly 75 feet high (Figure 74). Collateral reports indicate that this station may function as a radio station and/or as a jamming station.

II. STRUCTURES

Three buildings are located in close proximity to the four towers. 25X1

25X1

Two were in existence in [redacted] the third is visible on 1956 ground photography. All three buildings are large enough to accommodate the equipment necessary to operate the installation.

25X1

FIG 73. MOSCOW RADIO STATION (NO. 89) [redacted]

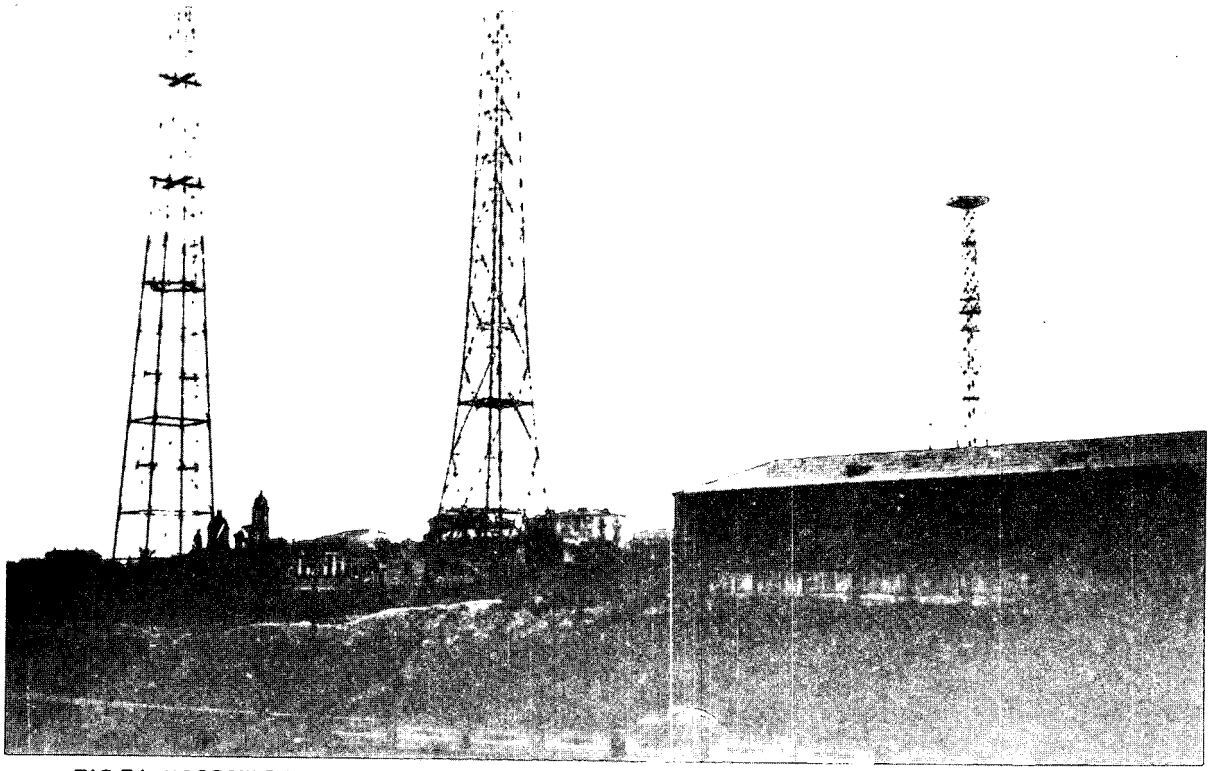


FIG.74. MOSCOW RADIO STATION (NO. 89) A southeast view showing all four steel towers (1956)

III. ANTENNAS

There are three self-supporting steel towers reportedly 250 feet high and one guyed steel tower reportedly 75 feet high located at this site (Figure 74). Two of the self-supporting towers are identical in appearance, and each contains an octagon-shaped platform approximately 30 feet in diameter at the top. Protruding approximately 15 feet beyond the outer limits of the platform are four steel arms constructed at right angles to each other (Figure 75). These arms are supported by a cable connected to a single vertical steel support which extends above the floor of the platform. In addition, each arm serves as the upper support for a 70-foot-long vertically hung cage antenna. Approximately 70 feet below the octagon platform is a second platform. This platform also has four arms extending out which anchor the terminating ends of the cage antennas hung from the top platform and which serve as the upper support for four additional

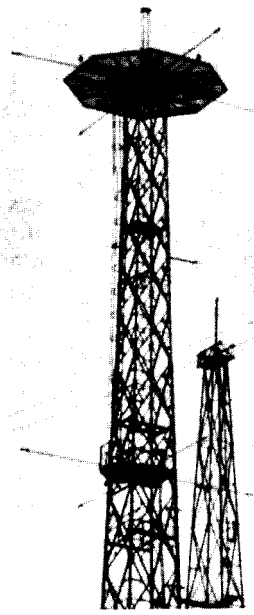


FIG.75. MOSCOW RADIO STATION (NO. 89) View of the octagon-shaped platform with four arms supporting vertically hung cage antennas (1956)

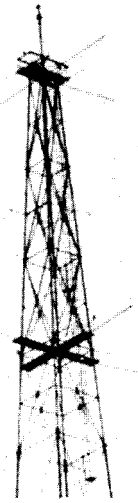


FIG.76. MOSCOW RADIO STATION (NO. 89) View of a self-supporting steel tower showing vertically hung cage antennas (1957)

80-foot-long vertically hung cage antennas. Approximately 80 feet below the second platform is a third platform with four arms which are identical to those above and which anchor the terminating ends of the cage antennas hung from the second platform. Four feed lines extend up each leg of each of these two 250-foot towers, making a total of 16 feed lines which

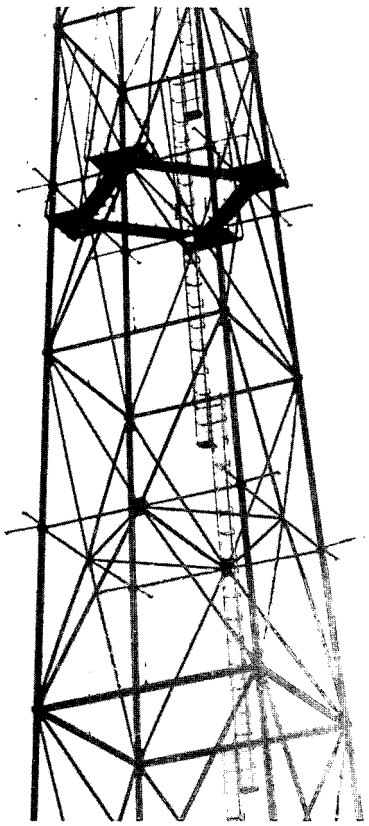


FIG.77. MOSCOW RADIO STATION (NO. 89) Example of cage antennas strung out from a 250 foot tower and probably anchored to the ground (1957)

serve the cage antennas on each tower. The third 250-foot-high self-supporting steel tower also has cage antennas mounted on it in a manner identical to that described above (Figures 75 and 76). Other cage antennas are supported by the 250-foot towers and are probably anchored to the ground (Figure 77). The fourth tower, a guyed steel tower, supports an undetermined number of horizontal cage antennas which are strung between this tower and the other three 250-foot towers (Figure 78).

PIC/JR-8/59

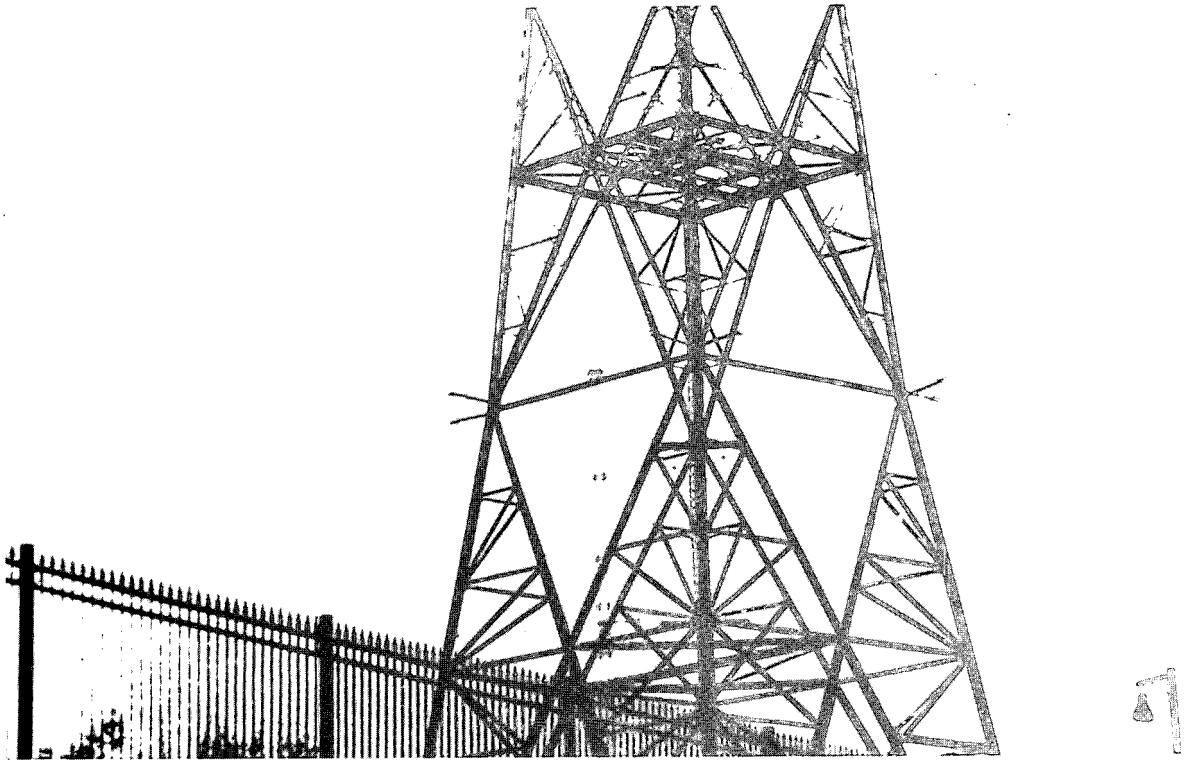


FIG.78. MOSCOW RADIO STATION (NO. 89) View of the cage antennas strung between towers and also the feed lines which extend up each leg of the 250 foot towers (1956)

Ground photography shows two cage antennas constructed in series, and this may be done in other cases not discernible on the available photography. All the cage antennas observed on ground photography are center-fed.

25X1

PHOTO DATA:

25X1

25X1

25X1

PIC/JR-8/59

25X1

MAP DATA:

ATMP -0-100. (S)

25X1 -4-25MA. (S)

COORDINATES: 55°44'N/37°39'E
37UDB159783

25X1

25X1

PIC/JR-8/59

NUMBER 94

MOSCOW TELEVISION STATION

I. GENERAL

Moscow Television Station is located 1.5 nautical miles south of the Kremlin on Sirotsky Per. between Shabolovka Ulitsa and Drovyanoy Pi. Pr. The station is reported to include several buildings and two self-supporting steel lattice towers. The activities reported to be carried on at the station include television broadcasting and radio and television research (Figure 79).

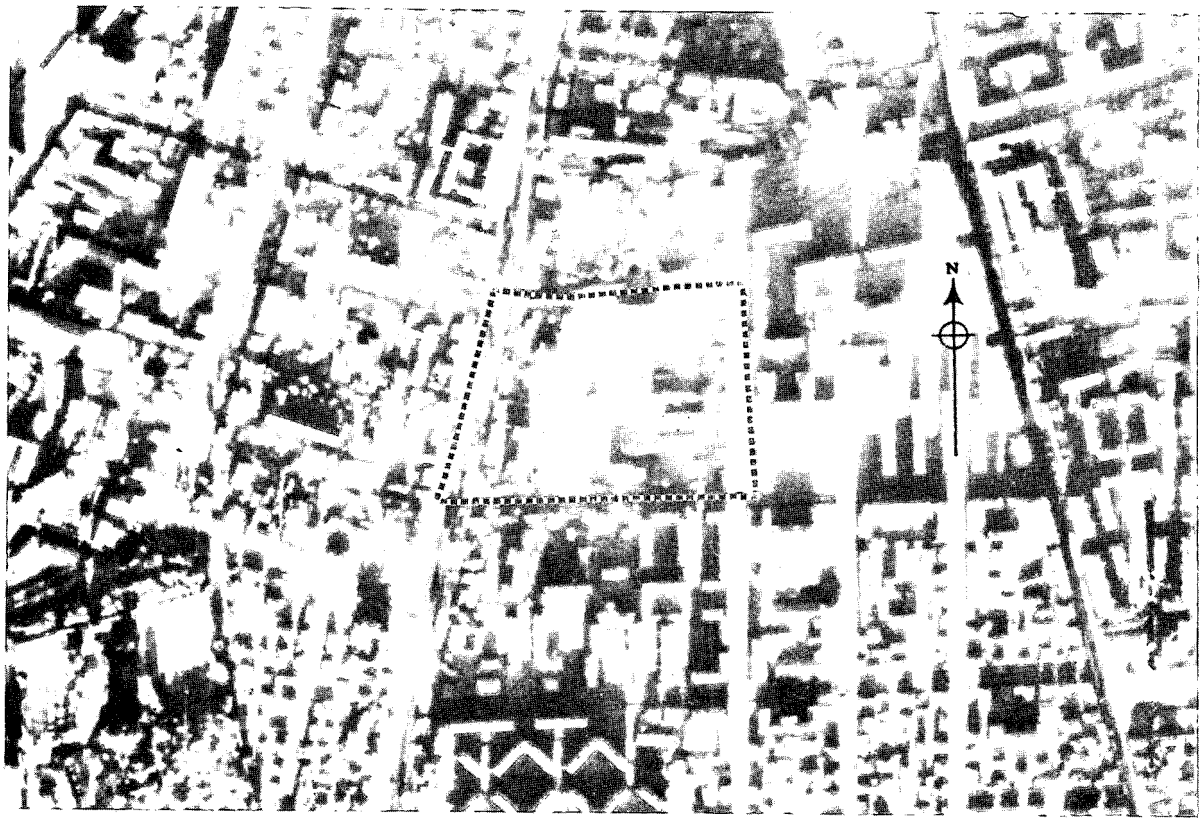


FIG.79. MOSCOW TELEVISION STATION

25X1

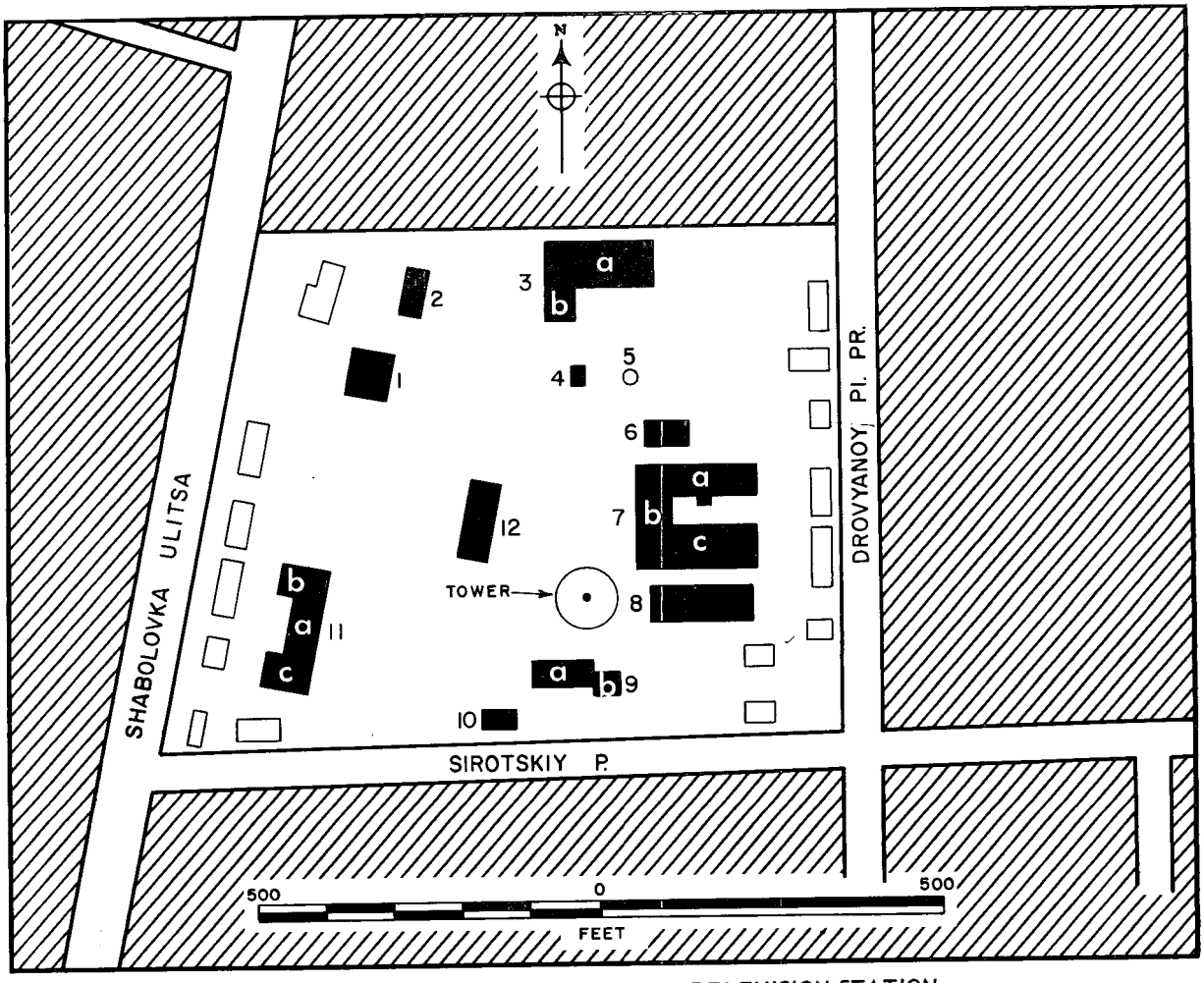


FIG.80. LINE DRAWING OF MOSCOW TELEVISION STATION

25X1

II. STRUCTURES

Aerial photography of [redacted] shows the station to be located in a densely built-up section of Moscow. Since it cannot be determined whether all or only some of the structures in the immediate vicinity are associated with the station, the following table lists all structures immediately surrounding the self-supporting steel tower present in [redacted] A building reported to be under construction in [redacted] contains 11 large television studios, the largest of which has approximately 1,000 square meters of floor space. 25X1

The following is a tabulation of structures in the area as of [redacted] (item numbers are keyed to Figure 80). 25X1

25X1

25X1

[redacted] 25X1

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Unidentified	3	Hip	70 x 65
2	Unidentified	1	Hip	75 x 35
3	Unidentified	3	Valley	-
3a	Base	3	Valley	160 x 60
3b	Wing	3	Valley	50 x 50
4	Unidentified	1	-	25 x 30
5	Possible cooling pond	-	-	25 dia.
6	Unidentified	-	-	70 x 35
7	Possible transmitter building	2 & 3	Complex	-
7a	Wing	2	-	170 x 50
7b	Base	2	-	50 x 45
7c	Wing	2 & 3	-	170 x 65
8	Support-type building	1	Gable	175 x 55
9	Unidentified	3	-	-
9a	Base	3	-	85 x 45
9b	Wing	3	-	50 x 45
10	Unidentified	1	Gable	50 x 35
11	Unidentified	3	Valley	-
11a	Base	3	Valley	80 x 45
11b	Wing	3	Valley	70 x 50
11c	Wing	3	Valley	70 x 50
12	Unidentified	1	-	110 x 45

III. ANTENNAS

One self-supporting conical steel tower 440 feet high is visible on [redacted] 25X1 photography. A television antenna array, identified on 1956 ground photography, is mounted at the top of this tower (Figure 81a). Other antennas mounted on this tower include vertically hung cage dipoles, horizontal dipoles, and probable microwave dishes. A catwalk extends from the base

of the tower to the transmitter building. Another self-supporting steel lattice tower reported to be approximately 400 feet high is identified on 1956 ground photography. This tower also has a television antenna array mounted on the top (Figure 81b).

FIG.81. MOSCOW TELEVISION STATION

a. View of self-supporting conical steel tower with television antenna array mounted on top. (1956)

b. View of self-supporting lattice tower with television antenna array mounted on top. (1956)

PHOTO DATA:

25X1

PIC/JR-8/59

25X1

25X1

MAP DATA:

ATMP [redacted] 0-100. (S)
4-25MA. (S)

[redacted]

COORDINATES: 55°43'N/37°36'E
37UDB131748

25X1

25X1

PIC/JR-8/59

25X1

NUMBER 98

MOSCOW RADIO STATION

A radio station is located in the science building at Moscow State University. The science building is 3.5 nautical miles southwest of the Kremlin and just north of the junction of Lomonosovskiy Prospekt and Lebedeva Ulitsa. Ground photography of 1958 shows several antennas mounted on the roof of the science building. The antennas which can be seen are two yagi arrays, one of which is a seven-element rotating yagi; vertically hung dipoles and horizontal cage antennas suported by a sectional lattice mast; and one unidentified antenna on top of this mast (Figure 83). The science building is visible on aerial photography, but the scale of the photography precludes identification of any antennas on the roof.

25X1

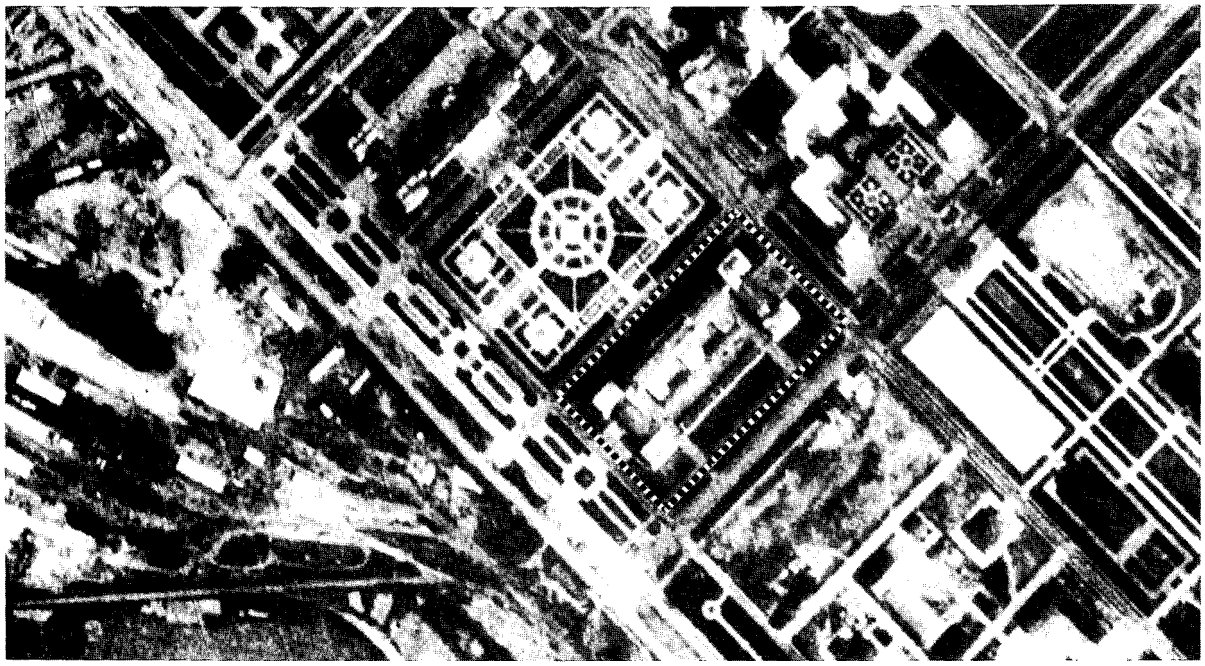


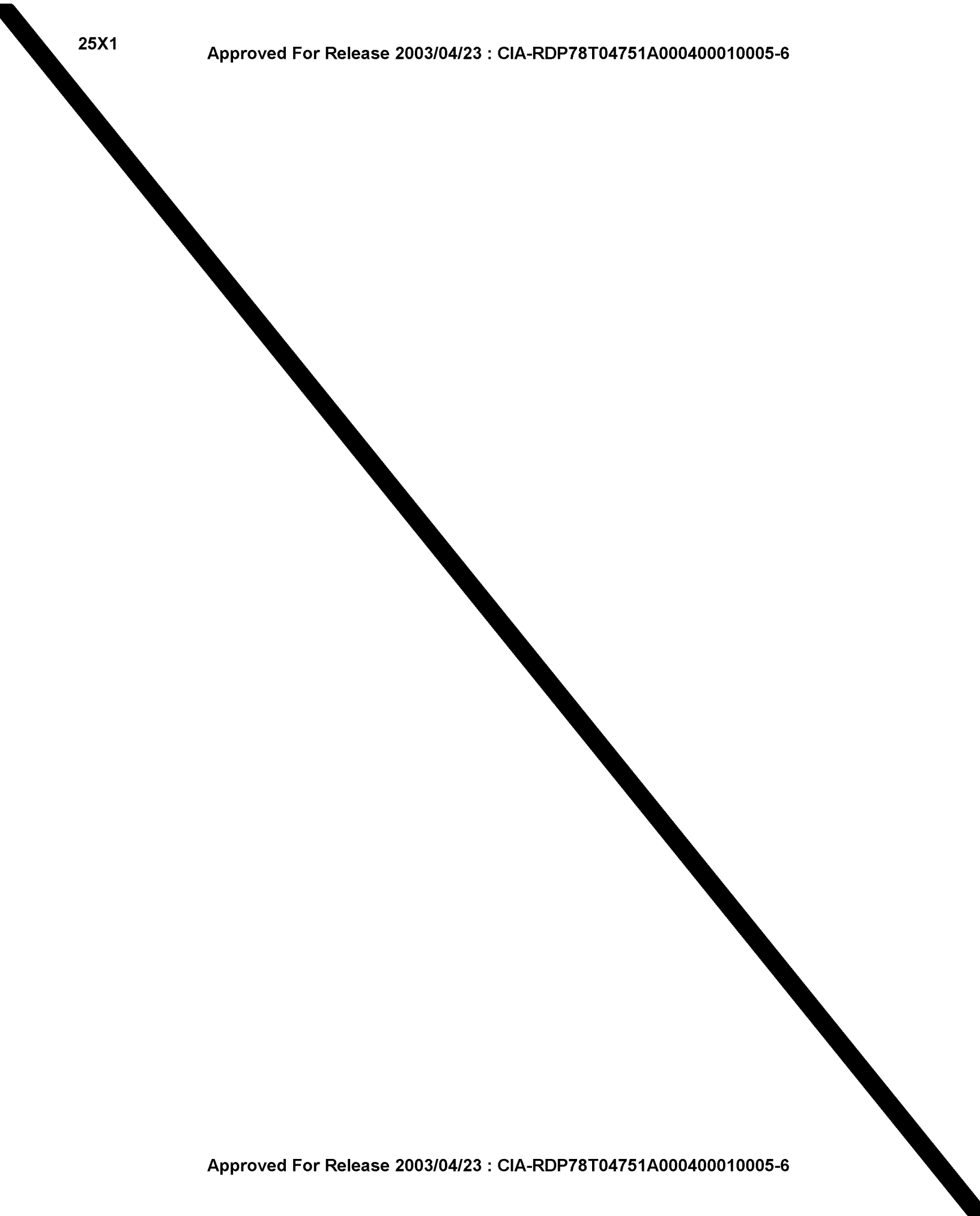
FIG.82. MOSCOW RADIO STATION (NO. 98)

25X1

25X1

25X1

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

PIC/JR-8/59

NUMBER 103

25X1

25X1

MOSCOW RADIO STATION

A radio station is located at the Post and Telegraph Building in Moscow. The building is 0.3 nautical miles northwest of the Kremlin at Gorkogo Ulitsa No. 7. The Ministry of Communications is also reported to be located here. Aerial photography of [redacted] shows that the build-

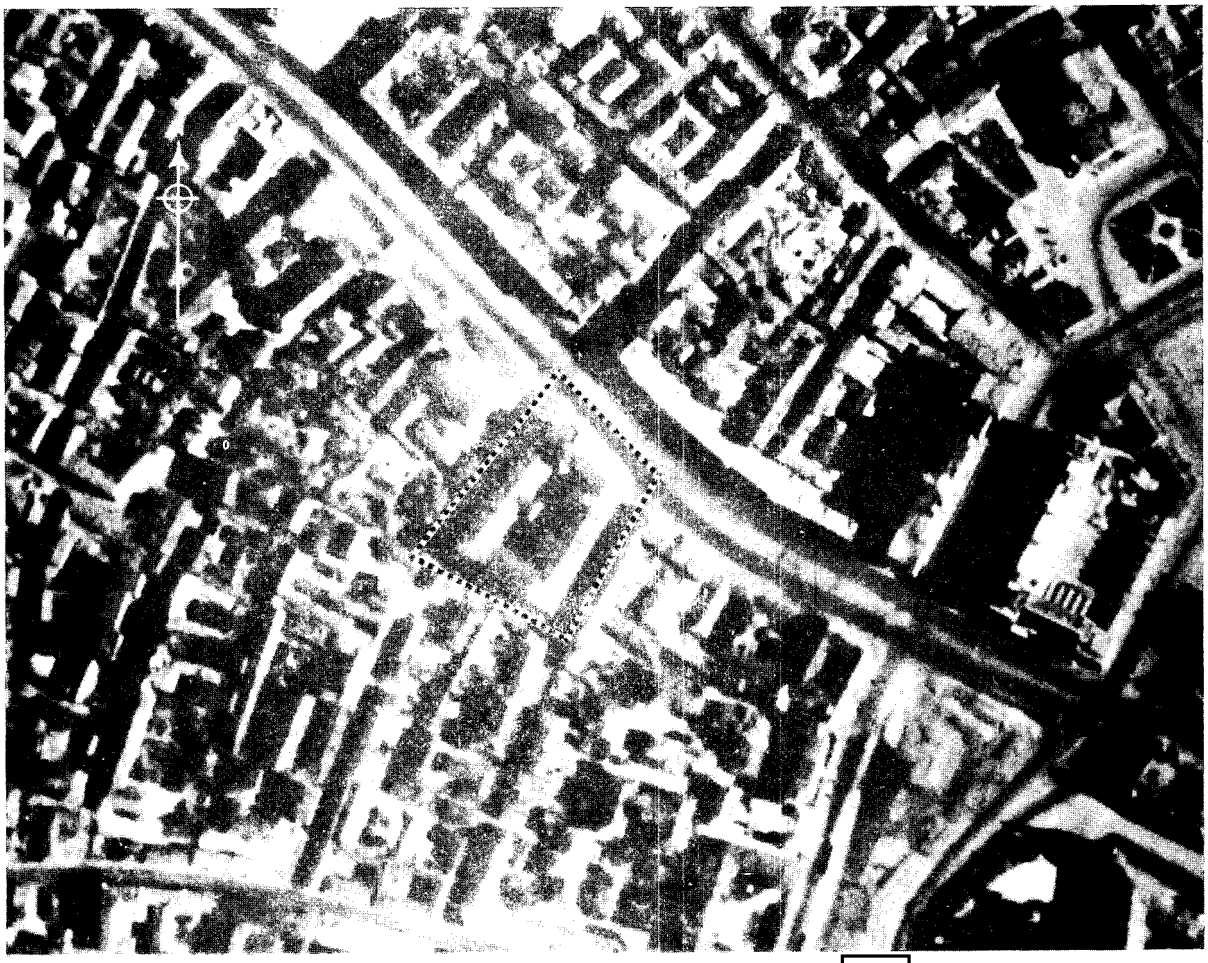


FIG.84. MOSCOW RADIO STATION (NO. 103) [redacted]

25X1

25X1

ing is a four-story quadrangle-type structure with a valley-type roof. The dimensions of the four sides are 410 by 90 feet, 125 by 90 feet, 400 by 90 feet, and 110 by 90 feet. The main entrance of the building is at the northernmost corner. This building is five stories high, is oval-shaped, and has a flat roof. Ground photography of 1957 shows four stick masts, two probable VHF antennas, and two unidentified antennas on top of the flat-roof part of the building. One of the unidentified antennas is reported to be a maypole type and the other to be a UHF antenna. Approximately four stick masts are located on other sections of the roof. Poor resolution of aerial photography of [redacted] prevents identification of the building.

25X1

[redacted]

25X1 MAP DATA: 25X1

ATMP [redacted] 0-100. (S)
4-25MA. (S)

[redacted]

COORDINATES: 55°45'N/37°36'E
25X1 37UDB130791

PIC/JR-8/59

NUMBER 104

MOSCOW RADIO STATION

A radio station with a palm-tree-type tower is reported to be located 3 nautical miles west of the Kremlin. This tower cannot be identified on aerial photography. The accompanying 1955 ground photography shows the tower, a self-supporting steel structure over 100 feet high with four sails extending up and out from the top of the tower and constructed at approximately 60° to the horizontal. Attached to the top of the tower are possibly four wires which support diagonally strung cage dipoles. These dipoles are anchored to the ground at an undetermined distance from the base of the tower. In addition, a vertically hung cage dipole extends down one side of the tower and is probably anchored at the base. Although vertically hung cage dipoles cannot be seen mounted on all sides of this tower, their existence is possible. This tower is similar to the towers at Moscow Radio Station (No. 89).

25X1

25X1

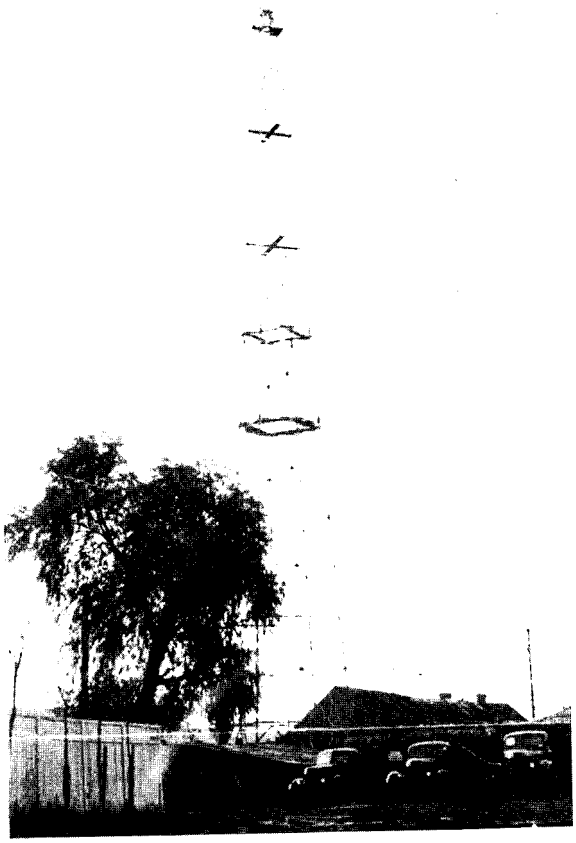
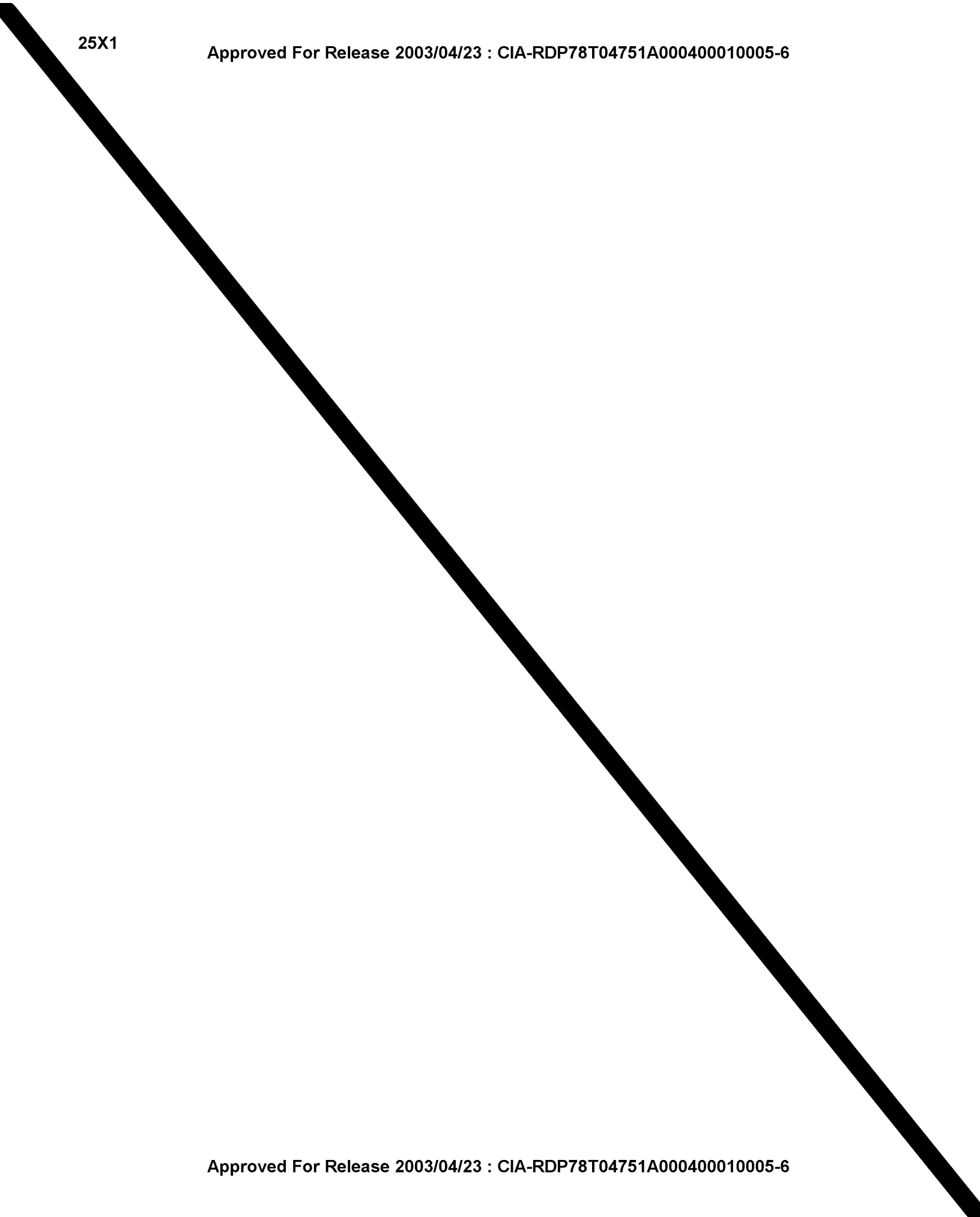


FIG.85. MOSCOW RADIO STATION (NO. 104)
Showing palm-tree-type tower. (1955)

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

PIC/JR-8/59 25X1

NUMBER 107

OKTYABR'SKIY ANTENNA FARM

I. GENERAL

Oktyabr'skiy Antenna Farm is located in the northwestern sector of Moscow, 5 nautical miles (nm) west-northwest of the Kremlin and 1 1/2 nm west of Moscow Central Airfield (Figure 86). This antenna farm, which is reported to be the oldest radio transmitting station in the USSR,

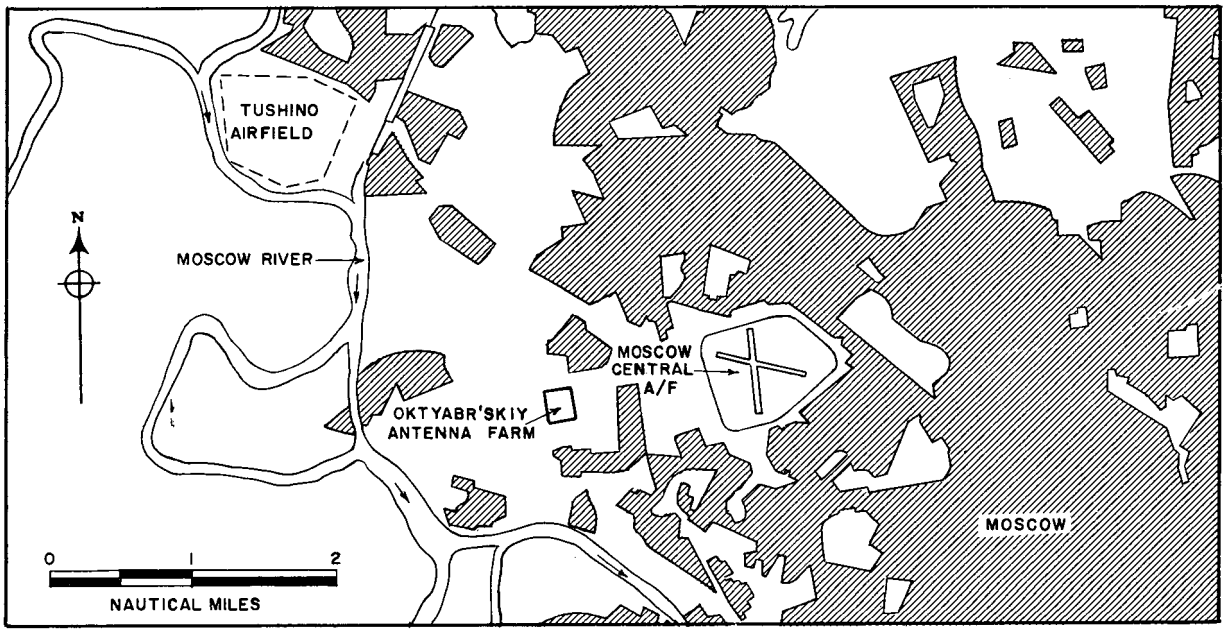


FIG.86. LOCATION MAP

is road- and rail-served, fenced, and covers approximately 240 acres. No service utilities are visible on the photography, but a power plant is reported to be under construction adjacent to the eastern fence, and several water wells are reported to be located on the farm property.

Aerial photography of [redacted] shows two transmitter buildings with adjacent cooling ponds, numerous support structures,and an antenna

PIC/JR-8/59

FIG.87. OKTYABR'SKIY ANTENNA FARM (25X1

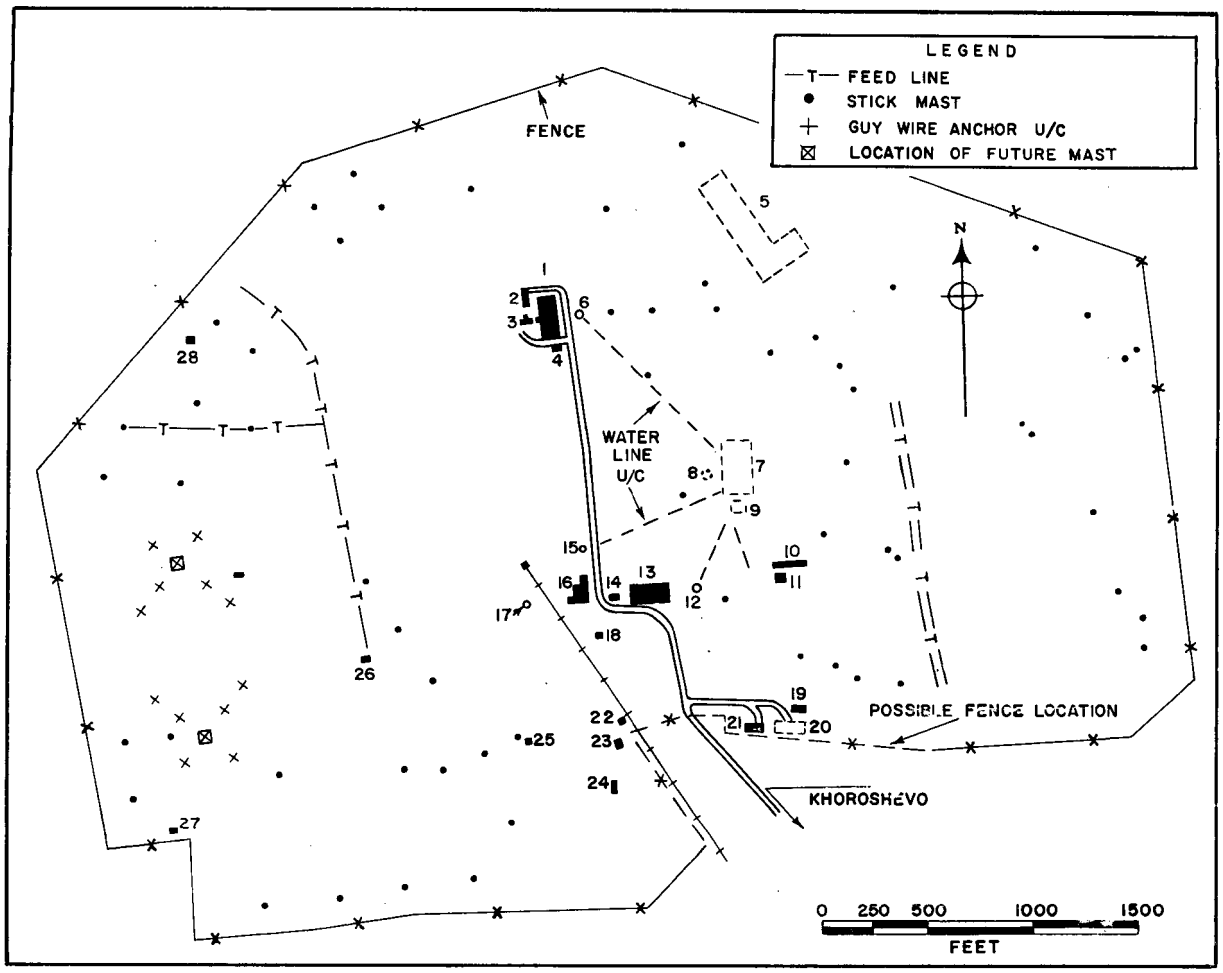


FIG.88. LINE DRAWING OF OKTYABR'SKIY ANTENNA FARM

farm containing at least 60 stick masts supporting numerous types of antenna arrays (Figures 87 and 88).

Ground photography of 1957 and collateral reports of 1946-51 indicate that several hundred antenna arrays are located at this farm. These arrays include caged dipoles, horizontal dipoles, vertical radiators, and rhombics. Although this installation is covered by [redacted] aerial photography, the resolution is too poor for detailed interpretation.

25X1

II. STRUCTURES

The following is a tabulation of the structures within the area as of [redacted] (item numbers are keyed to Figure 88).

25X1

PIC/JR-8/59

Item No.	Identification	Stories	Roof Type	Dimensions (feet)
1	Transmitter building	4	Complex	195 x 70
2	Support building	1	Gable	75 x 20
3	Support building	1	Gable	55 x 25 (main) 25 x 25 (wing)
4	Support building	1	Gable	50 x 25
5	Underground shelter U/C	-	-	530 x 175
6	Cooling pond	-	-	45 dia.
7	Structure U/C	-	-	Undefinable
8	Structure U/C	-	-	35 dia.
9	Structure U/C	-	-	Undefinable
10	Structure U/C	1	-	170 x 10
11	Support building	1	Gable	40 x 30
12	Cooling pond	-	-	45 dia.
13	Transmitter building	-	-	195 x 70 (approx)
14	Support building	1	Gable	50 x 25
15	Standpipe	-	-	30 dia. 70 high (approx)
16	Support building	3	Flat	80 x 80 (over-all)
17	Possible storage tank	-	-	20 dia.
18	Support building	1	Shed	15 x 15
19	Support building	1	Gable	50 x 30
20	Support building	2	-	90 x 60
21	Support building	2	Gable	80 x 30
22	Support building	1	Gable	60 x 25
23	Support building	1	Gable	55 x 30
24	Support building	1	Gable	65 x 35
25	Possible tuning shack	1	-	15 x 15
26	Possible tuning shack	1	-	15 x 15
27	Possible tuning shack	1	-	15 x 15
28	Possible tuning shack	1	-	15 x 15

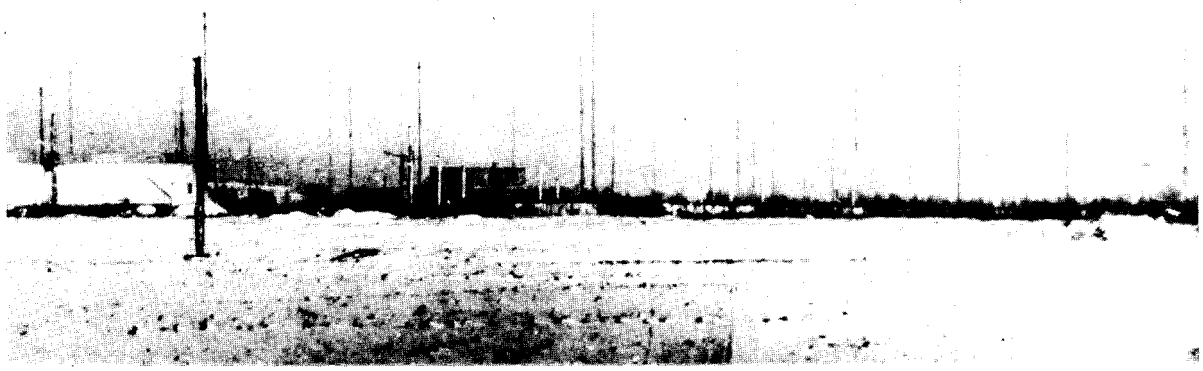


FIG.89. OKTYABR'SKIY ANTENNA FARM View of approx. 35 guyed stick masts (1957)

25X1

III. ANTENNAS

A total of 60 stick masts visible on aerial photography are plotted on a layout diagram (Figure 88). No antenna patterns can be identified on this photography, but portions of feed lines are visible and are plotted. The guy-wire anchor footings under construction in the western part of the installation indicate that lattice masts could be installed later. These masts would be approximately 875 feet apart. The anchor footings are approximately 140 and 310 feet, respectively, out from the projected mast base locations. Post-World War II reports state that there are several hundred stick masts of varying heights located within the area. Antennas visible on 1957 ground photography are horizontal caged dipoles, one of which consists of six wires, and numerous stick masts in possible rhombic patterns (Figures 89, 90, and 91). There are at least six ladder-type supports with two crossarms each located within the area. Horizontal wires strung between these supports cannot be identified on 1957 ground photography; however, these supports are of the type normally used to support high-frequency curtain arrays consisting of a radiator and a reflector.

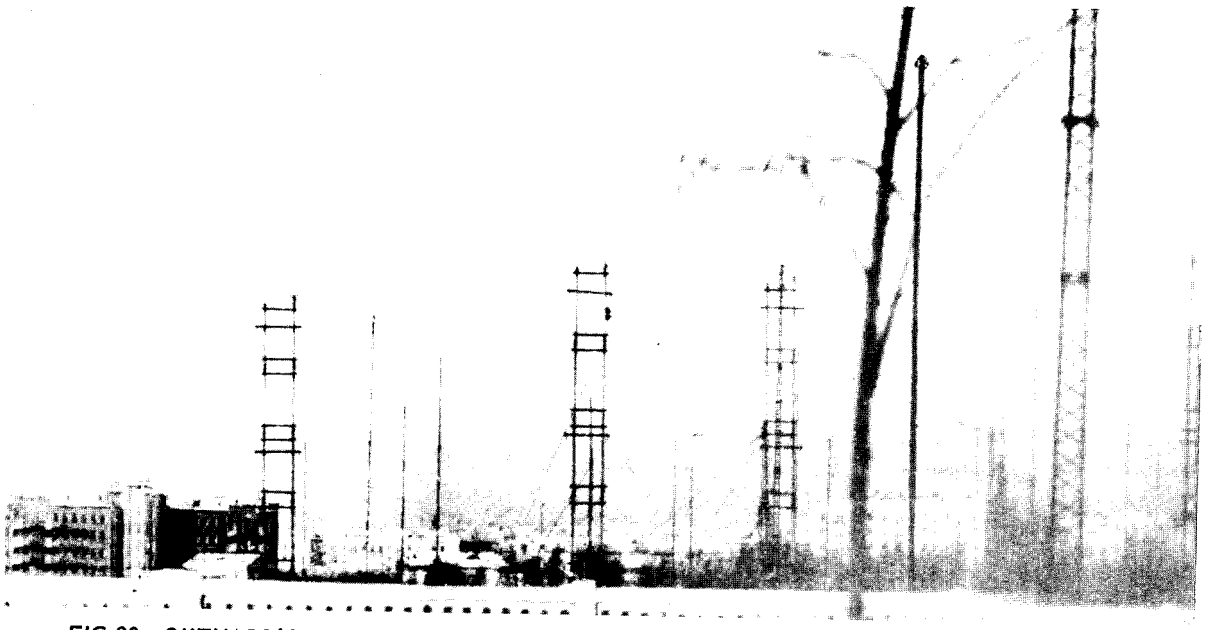


FIG.90. OKTYABR'SKIY ANTENNA FARM View of three tall towers, two guyed steel towers, and numerous guyed masts.

FIG.91. OKTYABR'SKIY ANTENNA FARM Near view of guyed masts and a horizontal cage antenna (1957).

Next 1 Page(s) In Document Exempt

Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

PIC/JR-8/59

25X1

NUMBER 108

MOSCOW RADIO STATION

A radio station is reported to be located at Petrovskiy Palace. The palace is 3.3 nautical miles northwest of the Kremlin, immediately northeast of Moscow Central Airfield, and 1,750 feet northwest of Dynamo Stadium. The station covers approximately 9 acres and consists of a large dome-roofed building 160 by 160 by 60 feet. The building is enclosed on three sides by curving wall-like structures 50 feet wide and 40 feet high. The wall is interrupted by eight towers. Aerial photography of reveals no evidence of a radio station or antennas at the palace but ground photography of 1955 shows two stick masts, reportedly antennas, protruding from two towers on the palace wall (Figure 92).

25X1

FIG.92. MOSCOW RADIO STATION (NO. 108) View of Petrovskiy Palace with two stick masts mounted on top of old fortifications. (1955)

25X1

25X1

25X1
25X1

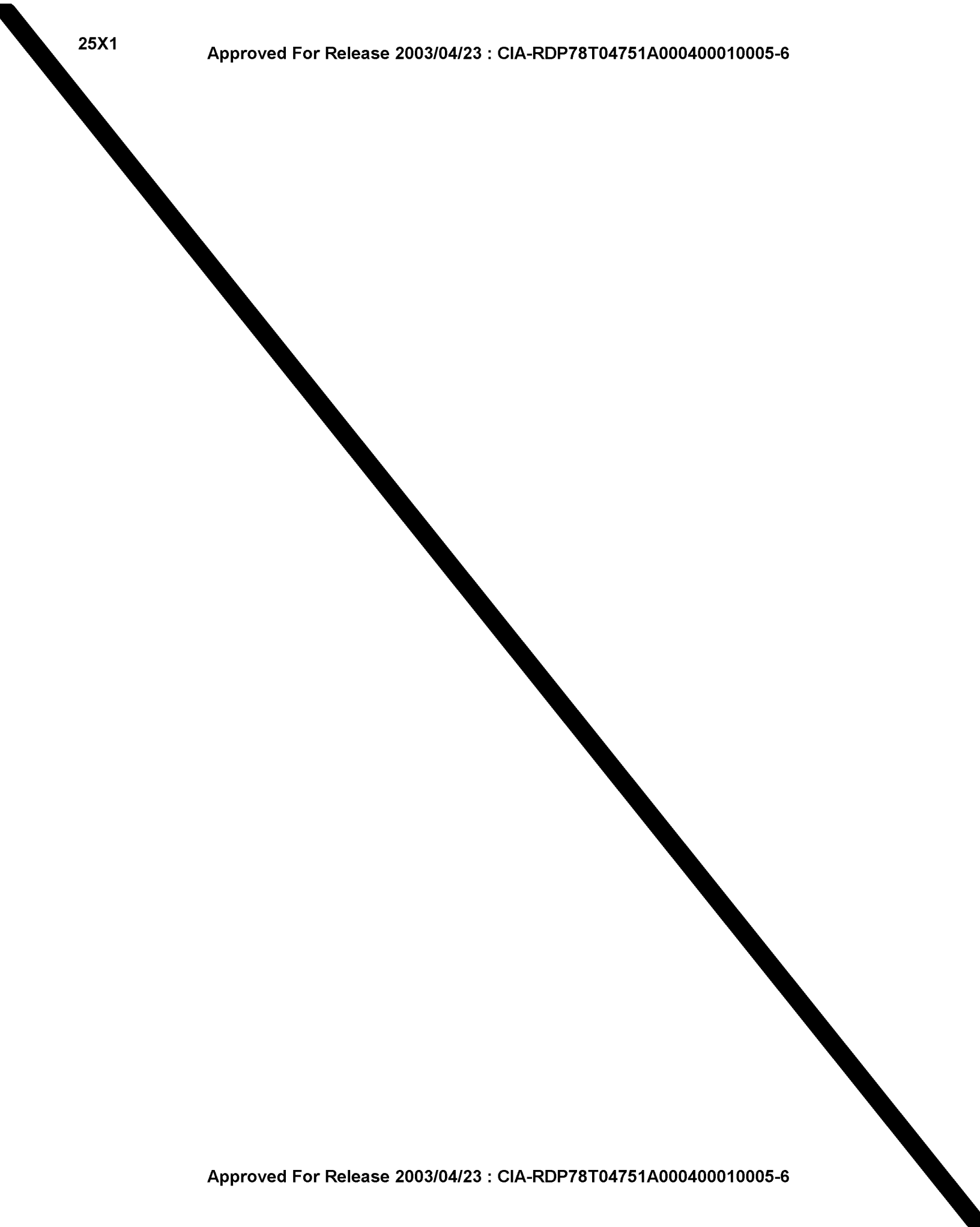
PIC/JR-8/59

FIG.93. MOSCOW RADIO STATION (NO. 108)

25X1

25X1

25X1
25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

There is tabulated in the table beginning on the following page all data available on the remaining 81 installations.

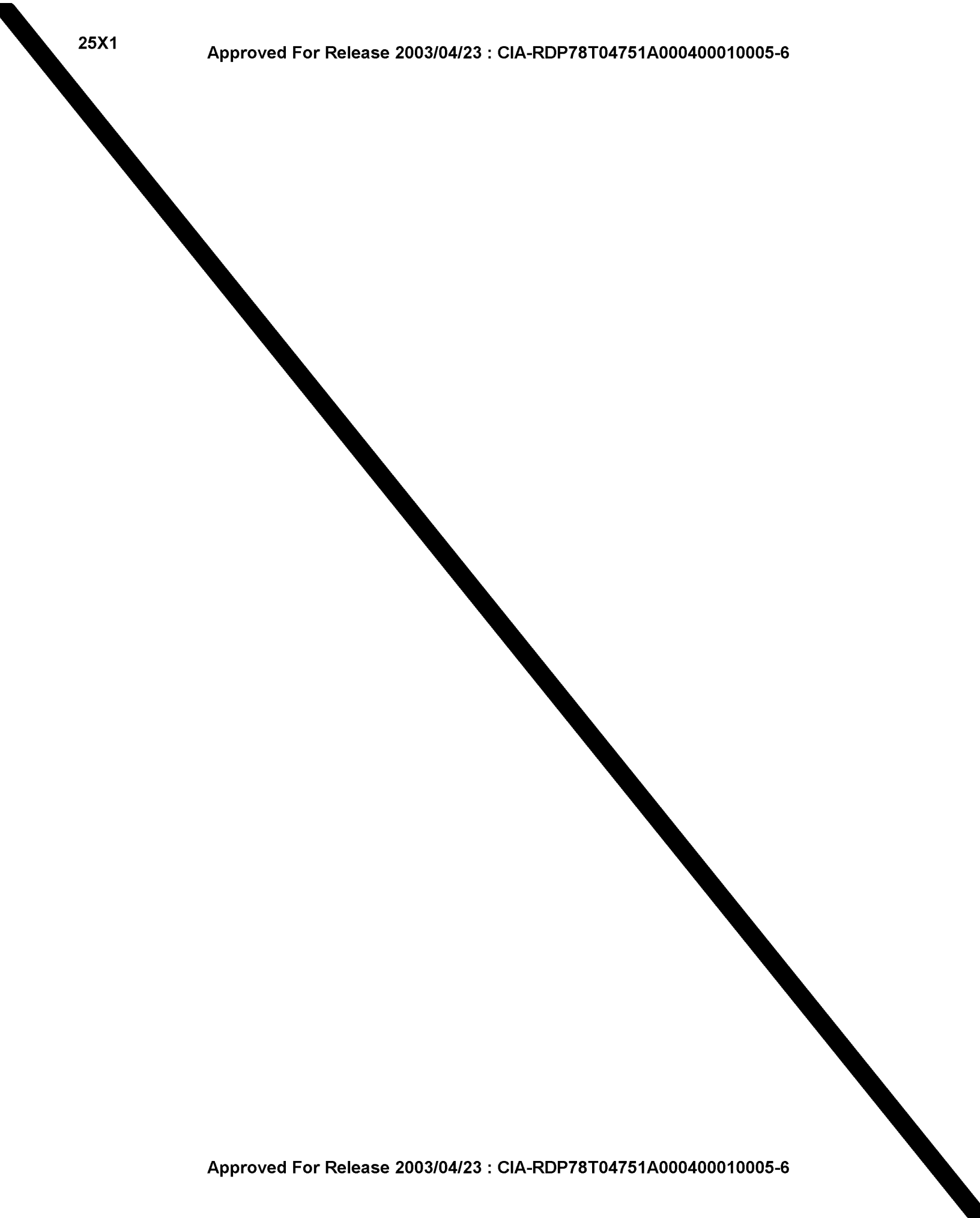
25X1

PIC/JR-8/59

RADIO STATIONS WITHIN A 50-

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
1	Possible radio station, 58 nm N of Moscow near Taldom	56°43'N/37°34'E 37UDC124872	Reported to contain stick masts arranged in two large semi-circles with large steel towers at their geometric centers. Cannot be identified on [redacted] photography.
2	Radio station, 56 nm N of Moscow and about 6 nm NW of village of Verbilki	56°35'N/37°29'E 37UDC101688	Reported to contain a group of towers approx. 150-250' high aligned approx. NE/SW. Cannot be identified on [redacted] photography.
3	Possible radio station, 45.5 nm NE of Moscow and 2 nm N of Zagorsk	56°20'N/38°08'E 37UDC475446	Reported to contain two masts 60' high and 200' apart; no connecting wires observed. Cannot be identified on [redacted] photography.
4	Antenna farm, 31 nm N of Moscow near Repikhovo	56°13'N/37°59'E 37UDC380316	Reported to contain approx. 50 stick masts, 40' high, arranged in two groups. Cannot be identified on [redacted] photography.
5	Radio station, 24.5 nm NNW of Moscow, 1.5 nm W of Moscow canal, and 4 km S of Iksha Lock #6	56°09'N/37°28'E 37UDC068230	Reported to contain 30 masts and a 300' tower.
6	Radio station, 22 nm NNE of Moscow and just E of Moscow/ Zagorsk highway between 43 and 45 km markers	56°05'N/37°57'E 37UDC322124	See detailed analysis.

25X1 25X1 25X1 25X1 25X1

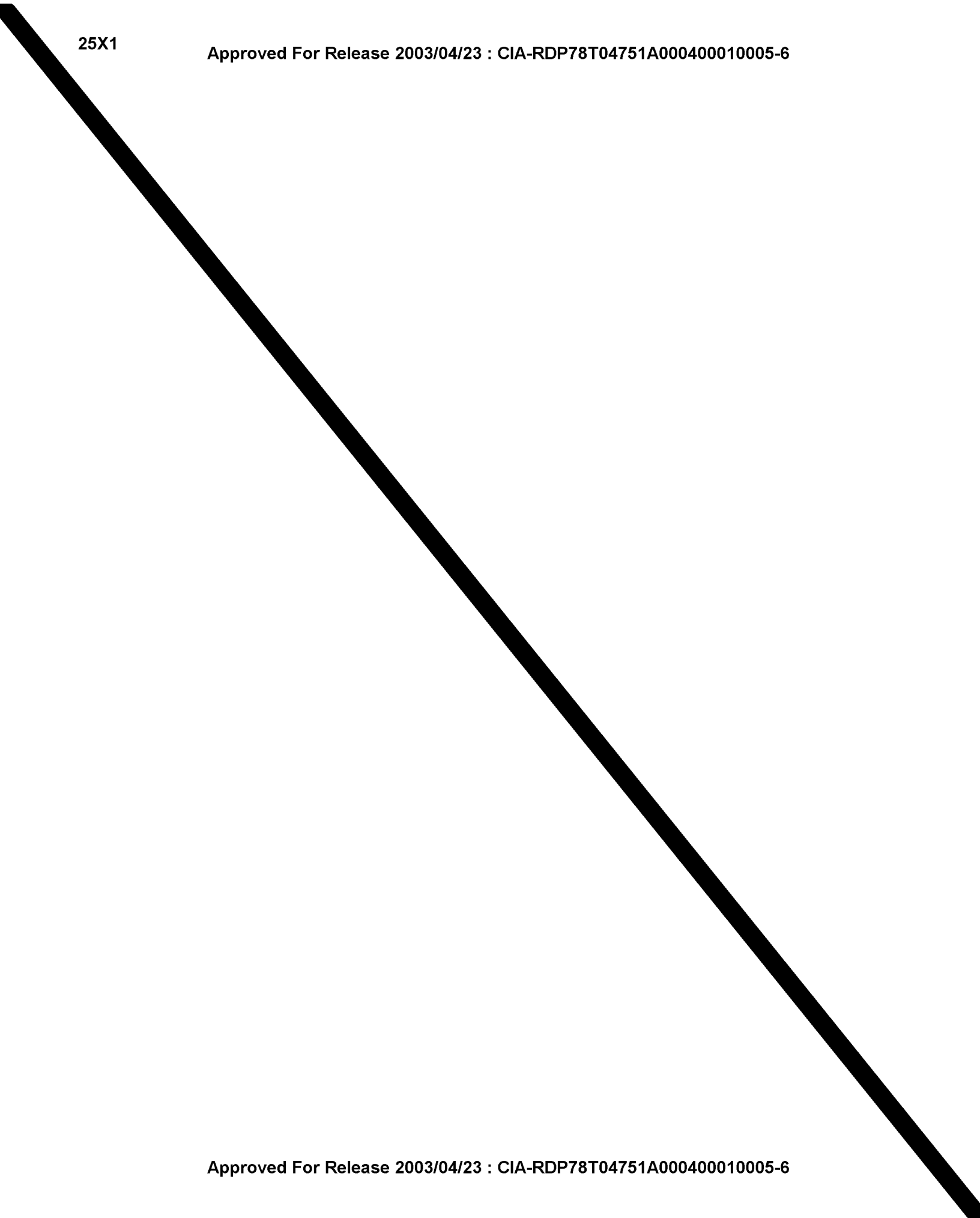


Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

PIC/JR-8/59

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
7	Possible radio station, 45.5 nm E of Moscow near Orekhovo-Zuyevo at 89 km mark	55°47'N/38°59'E 37UDB996831	Reported to contain three triangular-shaped 500' masts, probably guyed steel lattice towers. Cannot be identified on [redacted] photography. 25X1
8	Radio station, 27 nm E of Moscow and 3 nm SW of Noginsk	55°50'N/38°22'E 37UDB613882	See detailed analysis.
9	Radio station, 27 nm E of Moscow and 3 nm SW of Noginsk	55°50'N/38°21'E 37UDB590881	See detailed analysis.
10	Radio station, 17.5 nm NE of Moscow and 3 nm SE of Shchelkovo	55°54'N/38°04'E 37UDB422953	See detailed analysis.
11	Radio station, 16 nm NE of Moscow at Shchelkovo	55°54'N/38°00'E 37UDB378970	Cannot be identified on [redacted] photography. 25X1
			25X1
12	Radio station, 13 nm NE of Moscow and 1.5 nm E of Kaliningrad	55°55'N/37°52'E 37UDB300980	Reported to be under construction. Cannot be identified on [redacted] photography.
13	Radio station, 14.5 nm NNE of Moscow and 400 yards E of electrified railroad in village of Tarasovka	55°58'N/37°49'E 37UDC263025	Reported to contain 20 stick masts 30' to 60' high supporting squirrel-cage-type antennas. Site has been located on [redacted] photography, but quality of photography precludes positive identification as a radio station.
			25X1

25X1

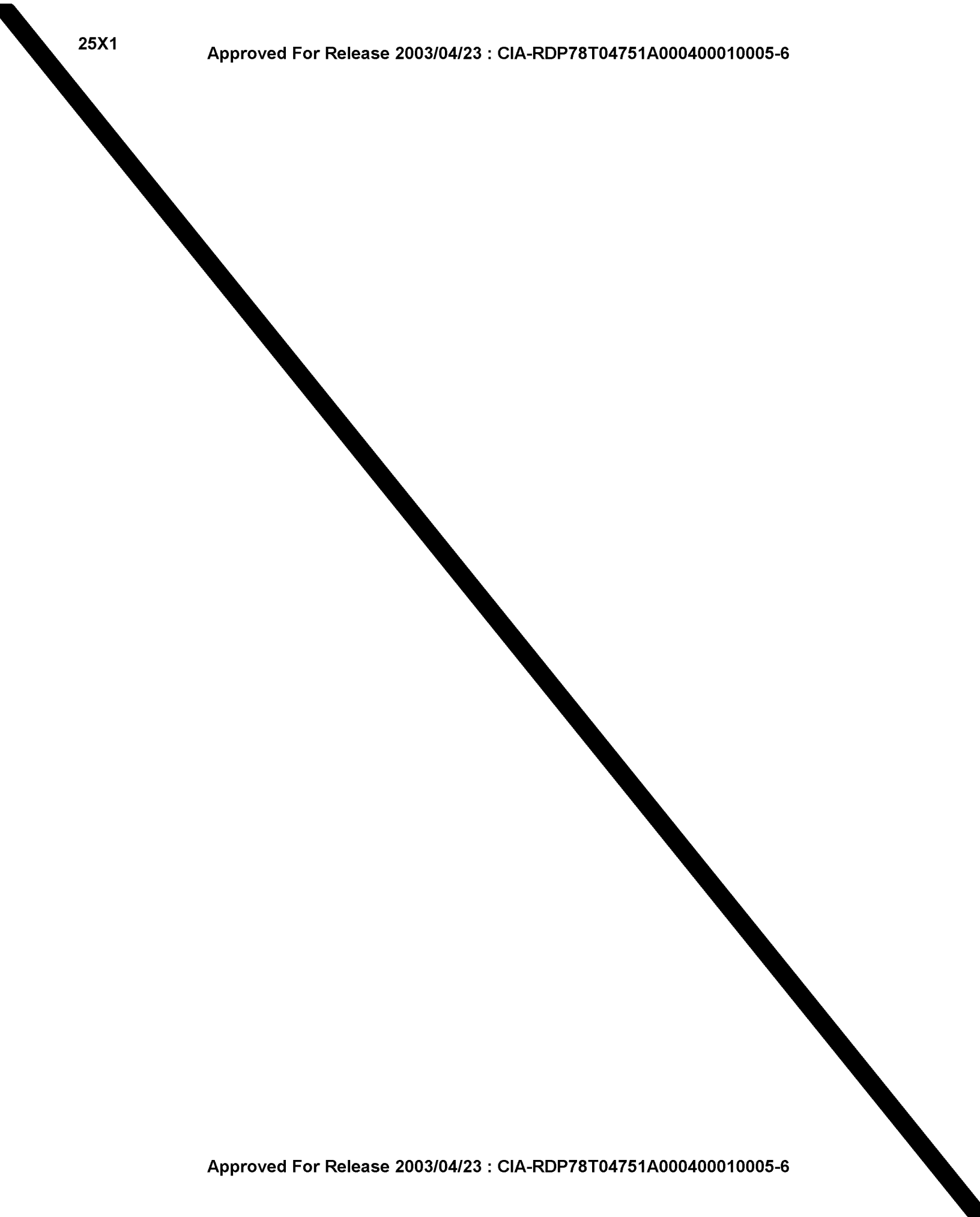


Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

PIC/JR-8/59

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
14	Radio station, 11.5 nm NE of Moscow on grounds of Moscow Military Communications Institute	55°56'N/37°44'E 37UDB218977	See detailed analysis.
15	Radio station, 12 nm N of Moscow and 1 nm SE of Belyaninovo	55°56'N/37°40'E 37UDB168988	See detailed analysis. 25X1
16	Radio station, 13 nm N of Moscow near Afanasovo	55°57'N/37°35'E 37UDC120030	Cannot be identified on [redacted] photography. 25X1
17	Probable radio station, 11.5 nm N of Moscow at Dolgoprudnaya	55°56'N/37°31'E 37UDB068993	Reported to contain a small number of stick masts within a factory area. Cannot be identified on [redacted] photography.
18	Krug site, 10 nm NE of Moscow and just SSW of Mytishchi	55°54'N/37°42'E 37UDB201961	Reported Wullenweber array. Cannot be identified on [redacted] photography. Possibly same as 19. 25X1
19	Radio station, 10 nm NE of Moscow and just E of Moscow/ Mytishchi Airfield	55°54'N/37°44'E 37UDB215960	Reported to contain 36 wooden masts. Cannot be identified on [redacted] photography. Possibly same as 18. 25X1

25X1



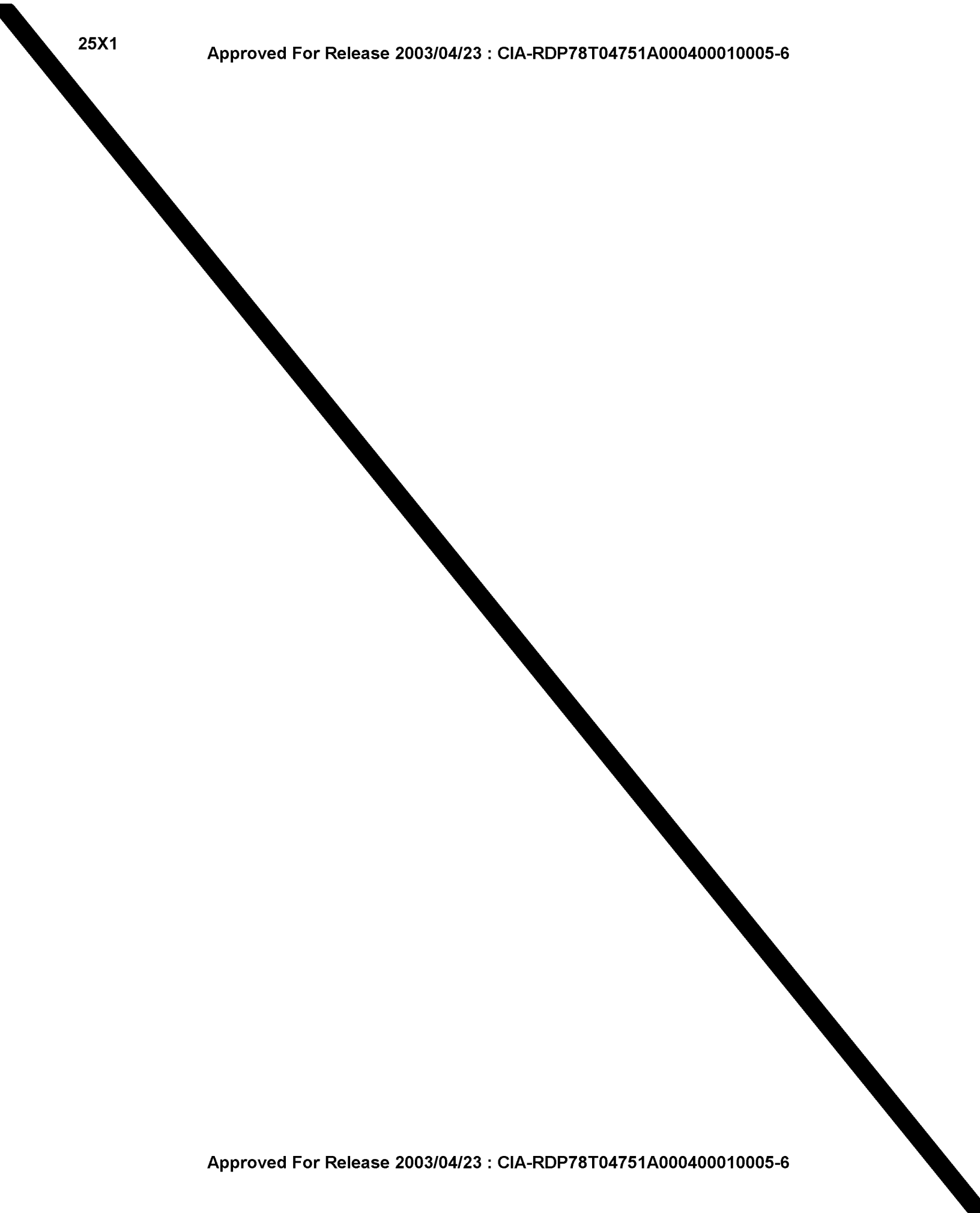
Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
20	Radio station, 8.5 nm N of Moscow and just S of village of Chelobit'yevo	55°53'N/37°41'E 37UDB173947	Reported to contain 20 masts 45' high in rows of 5, each with 2 squirrel-cage-type antennas, and 4 masts 80' high, 10' apart, with 5' by 10' wire, mesh between. Cannot be identified on [redacted] photography.
21	Radio station, 7.5 nm N of Moscow and S of Yaroslavl Shosse (highway) in Babushkin	55°51'N/37°42'E 37UDB190910	Cannot be identified on [redacted] photography. Ground photography of 1956 shows approx. 16 stick masts and one guyed steel lattice mast with microwave parabola on top. (See ground photo, Figure 94.)
22	Radio station, 7 nm NE of Moscow and just N of Izmaylovo Airfield	55°48'N/37°47'E 37UDB235850	Ground photography of 1956 shows a control building and 8 stick masts (See ground photo, Figure 95.) Cannot be identified on [redacted] photography.
23	Radio station, 8 nm NE of Moscow and just NE of Izmaylovo Airfield	55°48'N/37°48'E 37UDB250851	Reported to be a probable transmitting station with 30 wooden masts strung with horizontal HF half-wave cage antennas; one mast mounts 4 Bed Rests. (See ground photo, Figure 96.) Cannot be identified on [redacted] photography.

25X1 25X1

25X1

25X1 25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

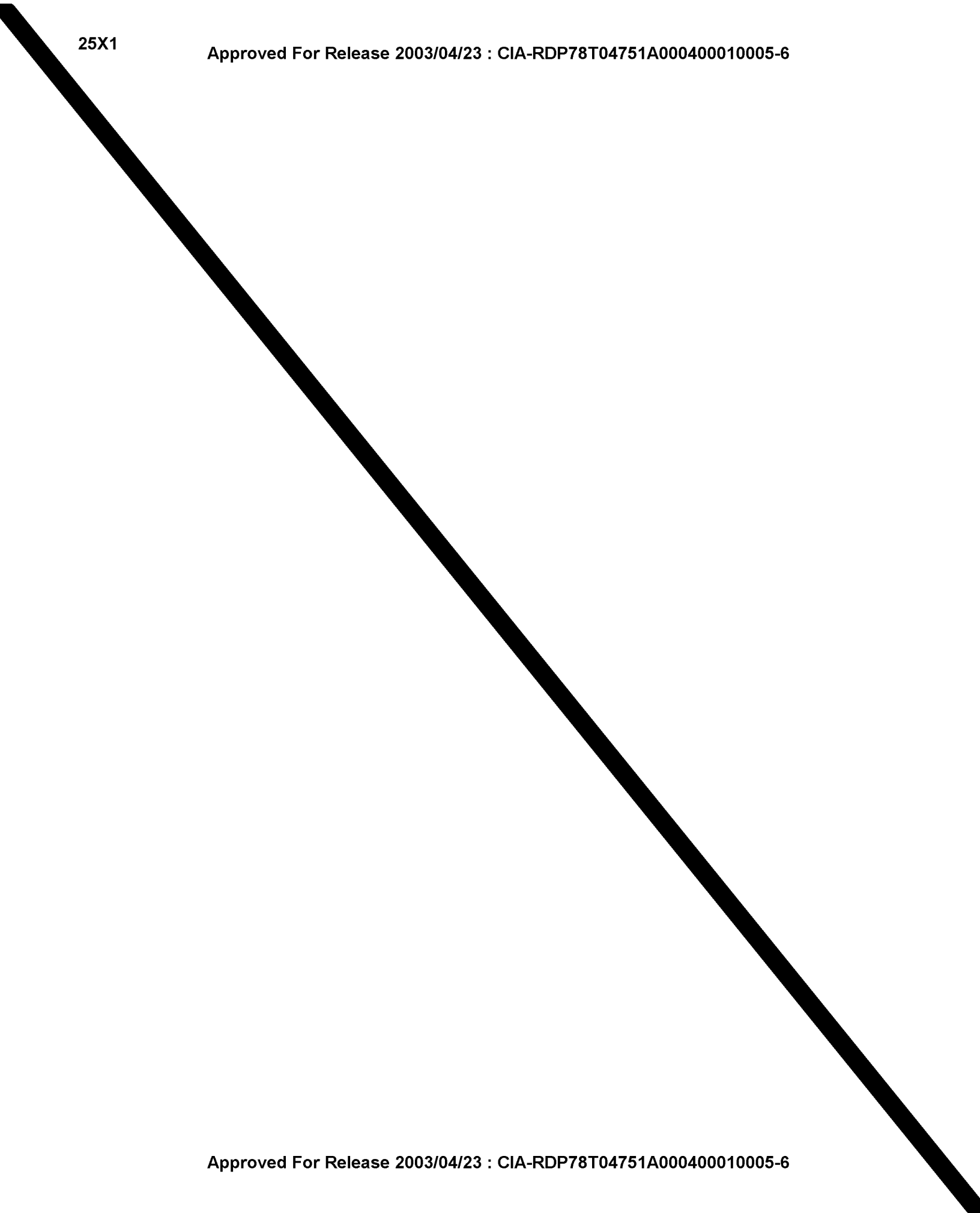
PIC/JR-8/59 25X1

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
24	Radio station, 9.5 nm E of Moscow and just S of Entuziastov Shosse	55°47'N/37°53'E 37UDB310816	Reported to contain stick masts approx. 60-80' high with 6 squirrel-cage-type antennas in a "V" pattern. Cannot be identified on [redacted] photography. 25X1
25	Radio station, 11 nm E of Moscow in town of Leonovo	55°47'N/37°56'E 37UDB333840	Reported to contain 5 masts 40' high supporting center-fed squirrel-cage-type antennas. Cannot be identified on [redacted] photography. 25X1
26	Radio station, 11.5 nm E of Moscow and S of Entuziastov Shosse	55°47'N/37°57'E 37UDB344820	Reported to contain 12 masts forming a combination of squirrel-cage and rhombic antennas. Cannot be identified on [redacted] photography. 25X1
27	Radio station, 14 nm E of Moscow in vicinity of Novaya and just N of Entuziastov Shosse	55°48'N/38°00'E 37UDB372841	Reported to contain approx. 30 masts 60' high making up squirrel-cage and rhombic antennas. Cannot be identified on [redacted] photography. 25X1
28	Radio station, 14 nm E of Moscow in vicinity of Novaya and just N of Entuziastov Shosse	55°48'N/38°01'E 37UDB396852	Reported to contain 36 masts. Cannot be identified on [redacted] photography.

25X1

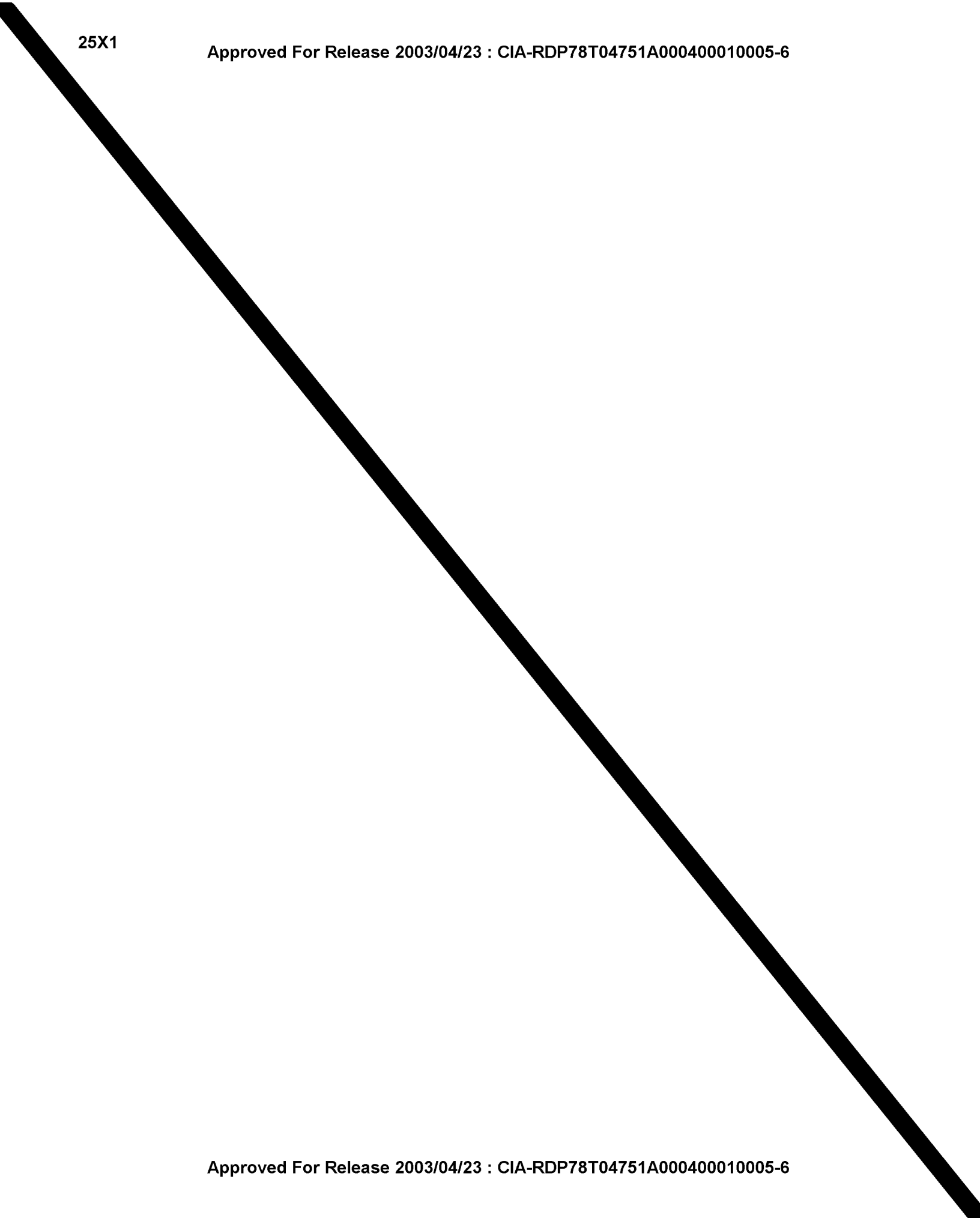
25X1

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
29	Radio station, 14 nm E of Moscow and S of Moscow/Gorkiy rail line in vicinity of 27 km mark	55°45'N/38°03'E 37UDB395784	Reported to contain 12 masts 80' high with double feeder from center of suspended wires. Cannot be identified on photography. 25X1 25X1
30	Antenna farm, 17 nm E of Moscow and just S of Moscow/Gorkiy rail line near Kupavna	55°45'N/38°06'E 37UDB455785	See detailed analysis.
31	Radio station, 26 nm E of Moscow, 4.75 nm S of Noginsk, and 1.3 nm W of Elektrostal	55°46'N/38°25'E 37UDB638819	See detailed analysis.
32	Antenna farm, 9 nm E of Moscow and S of road in Malyye Krutitsy	55°42'N/37°53'E 37UDB283771	Reported to contain 50-60 poles 60-70' high making up a combination of squirrel-cage and rhombic antennas. Cannot be identified on photography. 25X1
33	Antenna farm, 11.5 nm SE of Moscow between Panki and Tomilino	55°39'N/37°55'E 37UDB310680	Reported to contain fishbone antenna about 200 meters long, several rhombics, and numerous horizontal dipoles. Cannot be identified on photography. 25X1 25X1

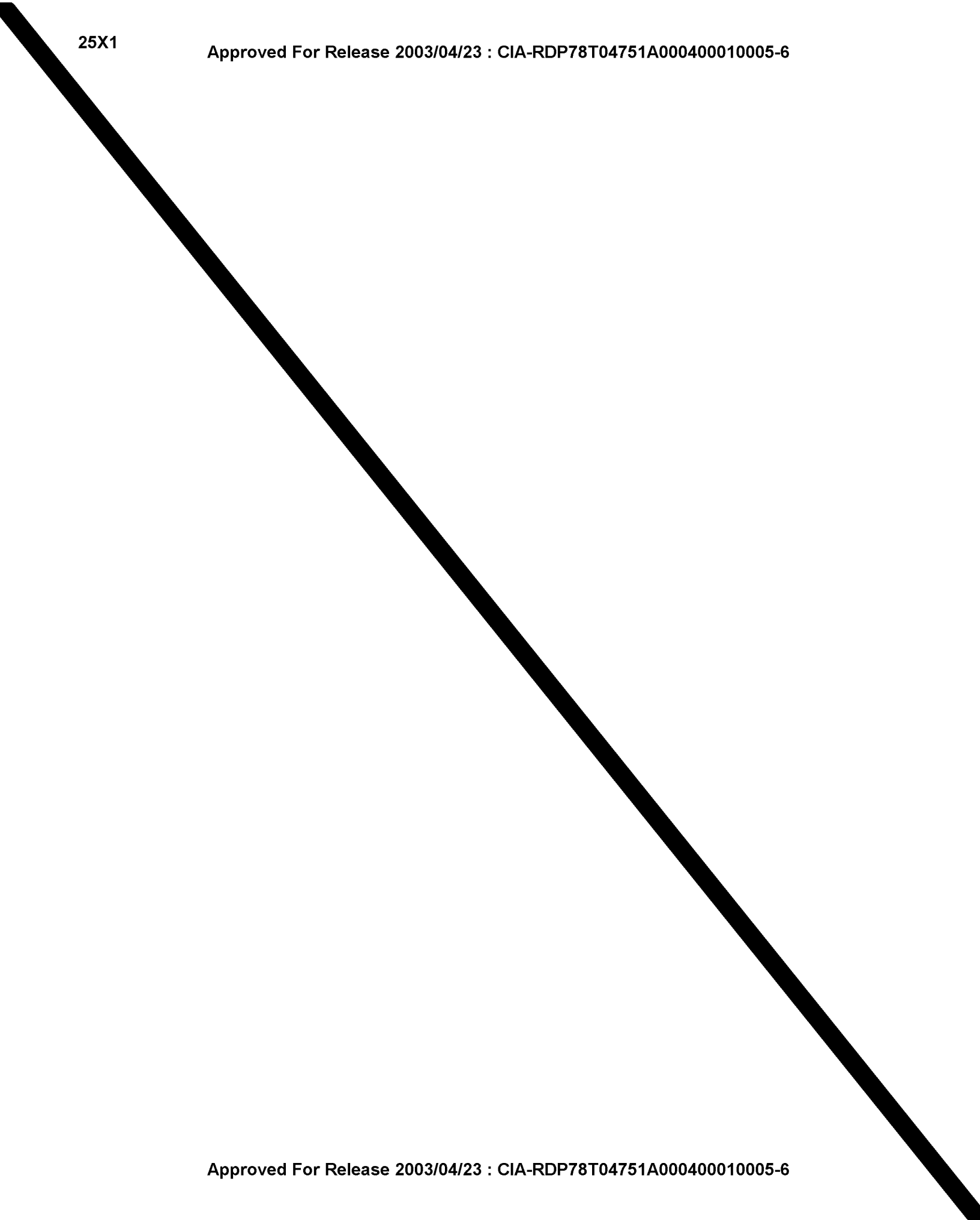


Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

PIC/JR-8/59

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
34	Radio station, 7.5 nm SW of Moscow and just E of Kon'kovo	55°38'N/37°32'E 37UDB072661	Cannot be identified on [redacted] photography. 25X1
35	Radio station, 17 nm ESE of Moscow and immediately W of Bykovo Airfield	55°37'N/38°05'E 37UDB415635	See detailed analysis.
36	Radio station, 9 nm S of Moscow and just NE of Biryulevo	55°36'N/37°41'E 37UDB172630	Reported to contain six masts 40' high forming three squirrel-cage-type antennas center fed by two wire transmission lines, separated by spreaders. Cannot be identified on [redacted] photography.
37	Antenna farm, 10 nm S of Moscow in vicinity of Biryulevo	55°36'N/37°41'E 37UDB175608	See detailed analysis. 25X1
38	Radio station, 10 nm S of Moscow at Biryulevo	55°35'N/37°40'E 37UDB170600	Cannot be identified on [redacted] photography. Possibly the same as No. 37. 25X1
39	Possible radio station, 12.5 nm S of Moscow at Rastorguyero	55°33'N/37°40'E 37UDB170560	Reported radio station at Rastorguyevo. Cannot be identified on [redacted] photography. 25X1
40	Antenna farm, 17 nm S of Moscow and on northern outskirts of Domodedovo	55°28'N/37°45'E 37UDB220470	See detailed analysis. 25X1

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

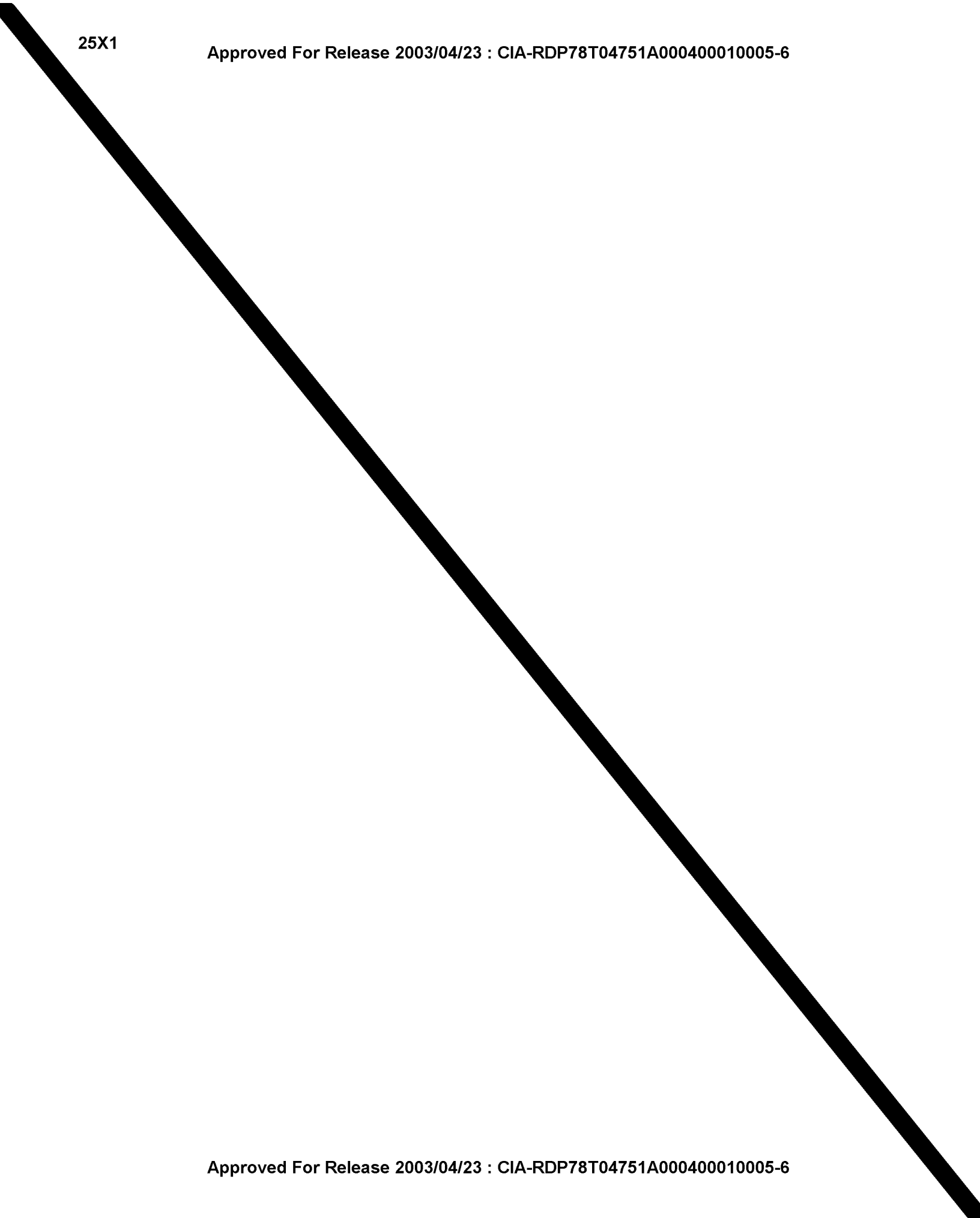
25X1

PIC/JR-8/59

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
41	Radio station, 50.5 nm S of Moscow at Serpukhov	54°54'N/37°24'E 37UCA985876	Reported to contain an antenna 30' high located on the roof of a fire station. Cannot be identified on [redacted] photography. 25X1
42	Radio station, 48.5 nm S of Moscow at km 94 from Moscow on Moscow/Serpukhov road	54°57'N/37°25'E 37UCA978905	Reported to contain one Nadenenko-type dipole stretched between two 60' masts, four masts 40' high, and one building. (See ground photo, Figure 97.) Cannot be identified on [redacted] photography. 25X1
43	Radio station, 37.5 nm S of Moscow at Chekhov	55°09'N/37°27'E 37UDB012118	Reported to contain a ground plane antenna approx. 30' high on the roof of a fire station. Cannot be identified on [redacted] photography.
44	Radio station, 23 nm S of Moscow and 500 yards W of Moscow/Tula highway	55°22'N/37°31'E 37UDB064367	Reported to contain 30-40 steel towers approx. 100-200' high with connecting wires.
45	Krug site, 22.5 nm S of Moscow, 4 nm SW of Podolsk, and 1 nm SE of village of Oznobishino	55°23'N/37°28'E 37UDB013380	Reported to contain about 50 short masts equally spaced around the circumference of a circle; at the center is a small square hut.

25X1

25X1

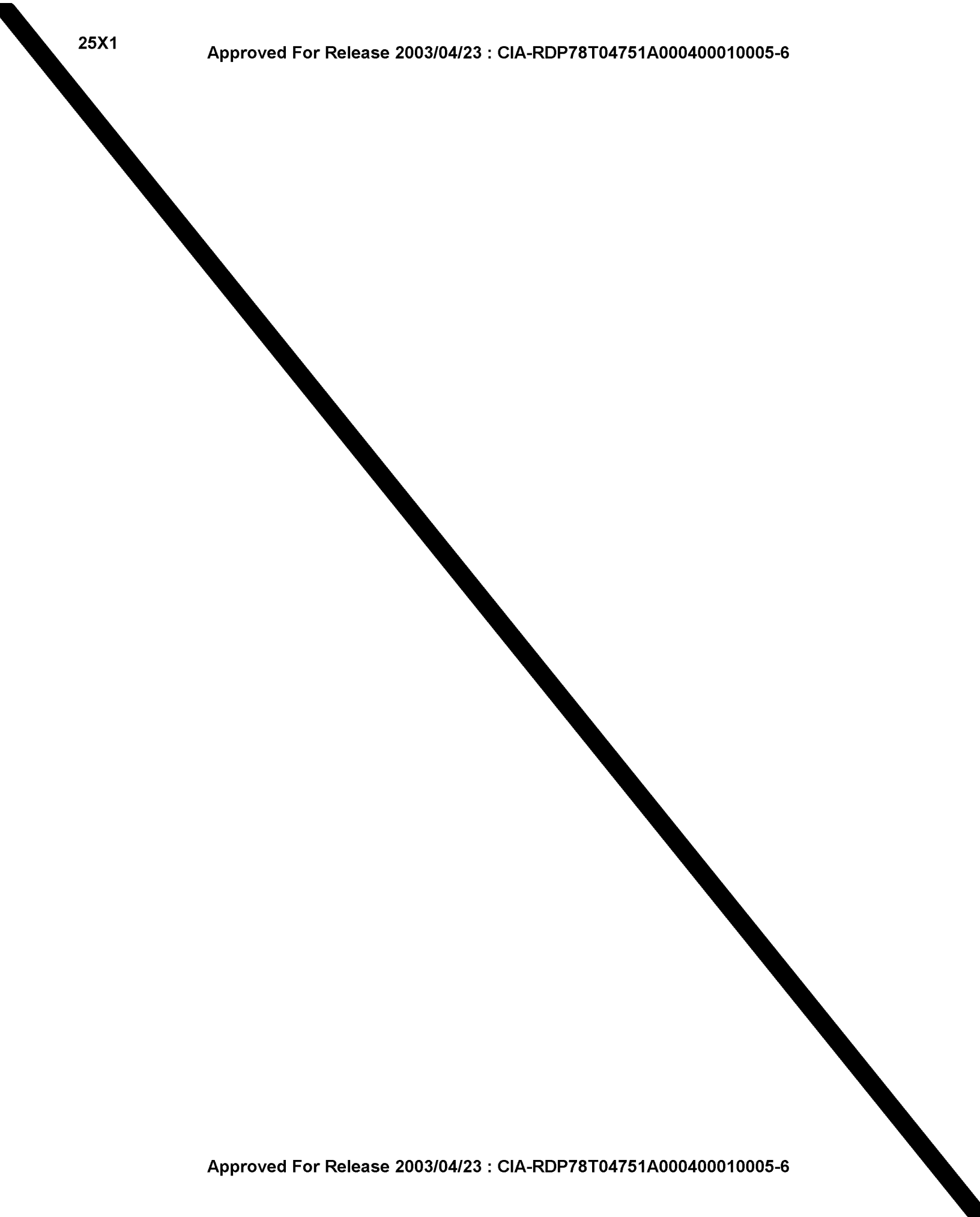


Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
46	Antenna farm, 13 nm S of Moscow and adjacent to SW corner of Butovo	55°32'N/37°33'E 37UDB102572	See detailed analysis. 25X1
47	Krug site, 19.5 nm SSW of Moscow near village of Vlas'yevo	55°28'N/37°22'E 37UDB972478	Reported Wullenweber array. The site cannot be identified on [redacted] photography.
48	Radio station, 19.5 nm SW of Moscow and midway between Vatutinki and Krasnaya Pakhra	55°28'N/37°18'E 37UDB930490	Reported to contain four poles 30-40' high making up one squirrel-cage antenna and one 60' mast with possible Bed Rest antenna. (See ground photo, Figure 98.) Cannot be identified on [redacted] photography.
49	Radio station, 18 nm SW of Moscow along the east side of Moscow/Kaluga highway between towns of Desna and Vatutinki	55°29'N/37°20'E 37UCB955505	See detailed analysis. 25X1
50	Radio station, 17.5 nm SW of Moscow along east side of Moscow/Kaluga highway between towns of Desna and Vatutinki	55°30'N/37°21'E 37UCB961514	See detailed analysis. 25X1
51	Radio station, 18 nm SW of Moscow near Vatutinki	55°30'N/37°19'E 37UCB940512	Reported to contain approx 20 tall poles. Cannot be identified on [redacted] photography.

25X1

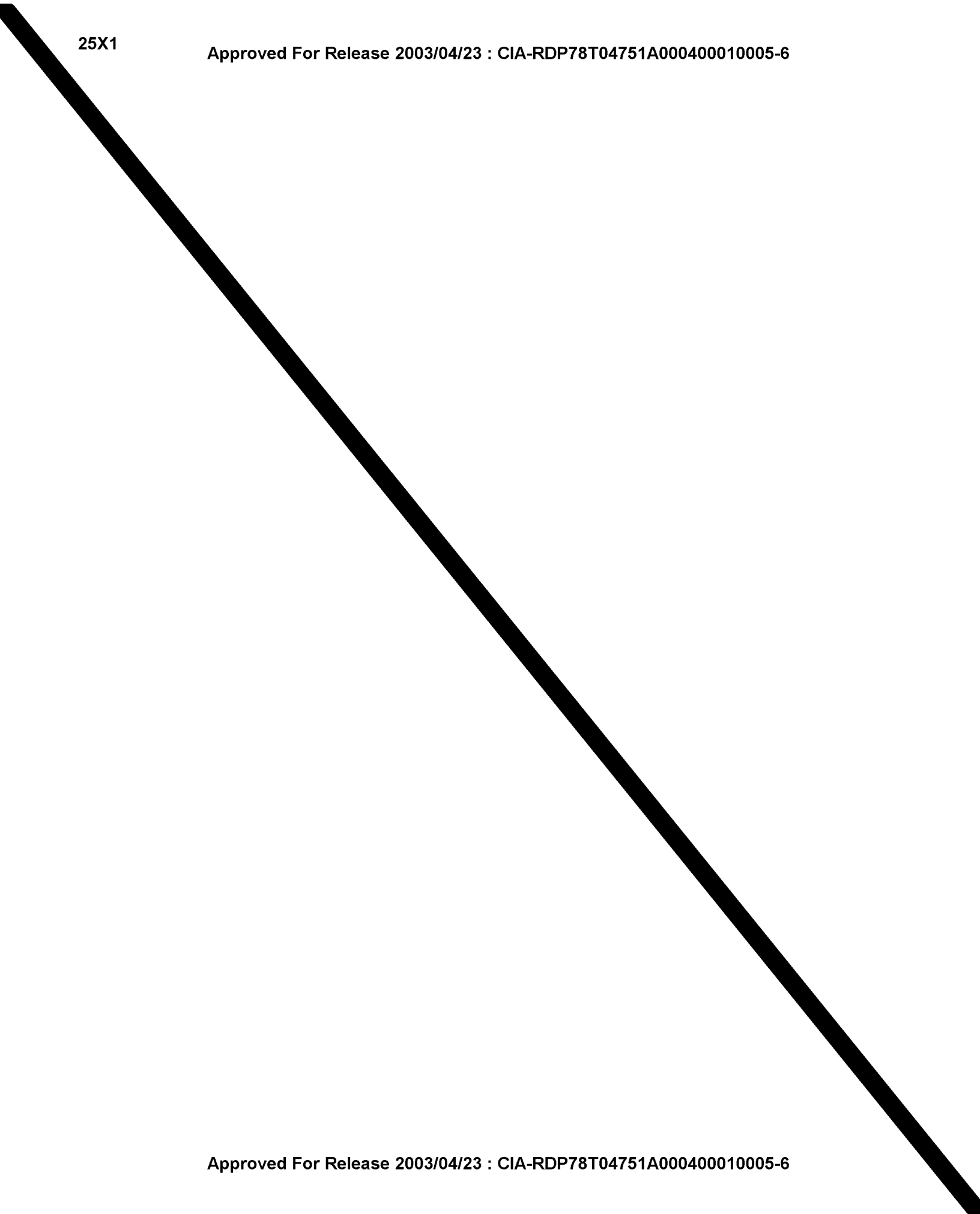
25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
			25X1
52	Antenna farm, 17.5 nm SW of Moscow, 2.5 km S of Desna, and behind a military area W of Moscow/ Kaluga road	55°30'N/37°21'E 37UCB960530	Reported small antenna farm and one 25' pole with a dish facing SE. Cannot be identified on photography. 25X1
53	Radio station, 17.5 nm SW of Moscow along east side of Moscow/Kaluga highway between towns of Desna and Vatutinki	55°30'N/37°22'E 37UCB973520	See detailed analysis.
54	Radio station, 17 nm SW of Moscow along east side of Moscow/ Kaluga highway between towns of Desna and Vatutinki	55°30'N/37°23'E 37UCB982520	See detailed analysis.
55	Antenna farm, 15.5 nm SSW of Moscow and approximately 1 nm S of village of Voskresenskoye	55°31'N/37°26'E 37UDB015517	Reported antenna farm adjacent to a military barracks area. (See ground photo, Figure 99.) Cannot be identified on aerial photography. 25X1
56	Antenna farm, 15 nm SW of Moscow near Penino	55°32'N/37°23'E 37UCB975548	Reported to contain 100 masts and to contain a combination of rhombic and squirrel-cage antennas. Cannot be identified on photography. 25X1

25X1

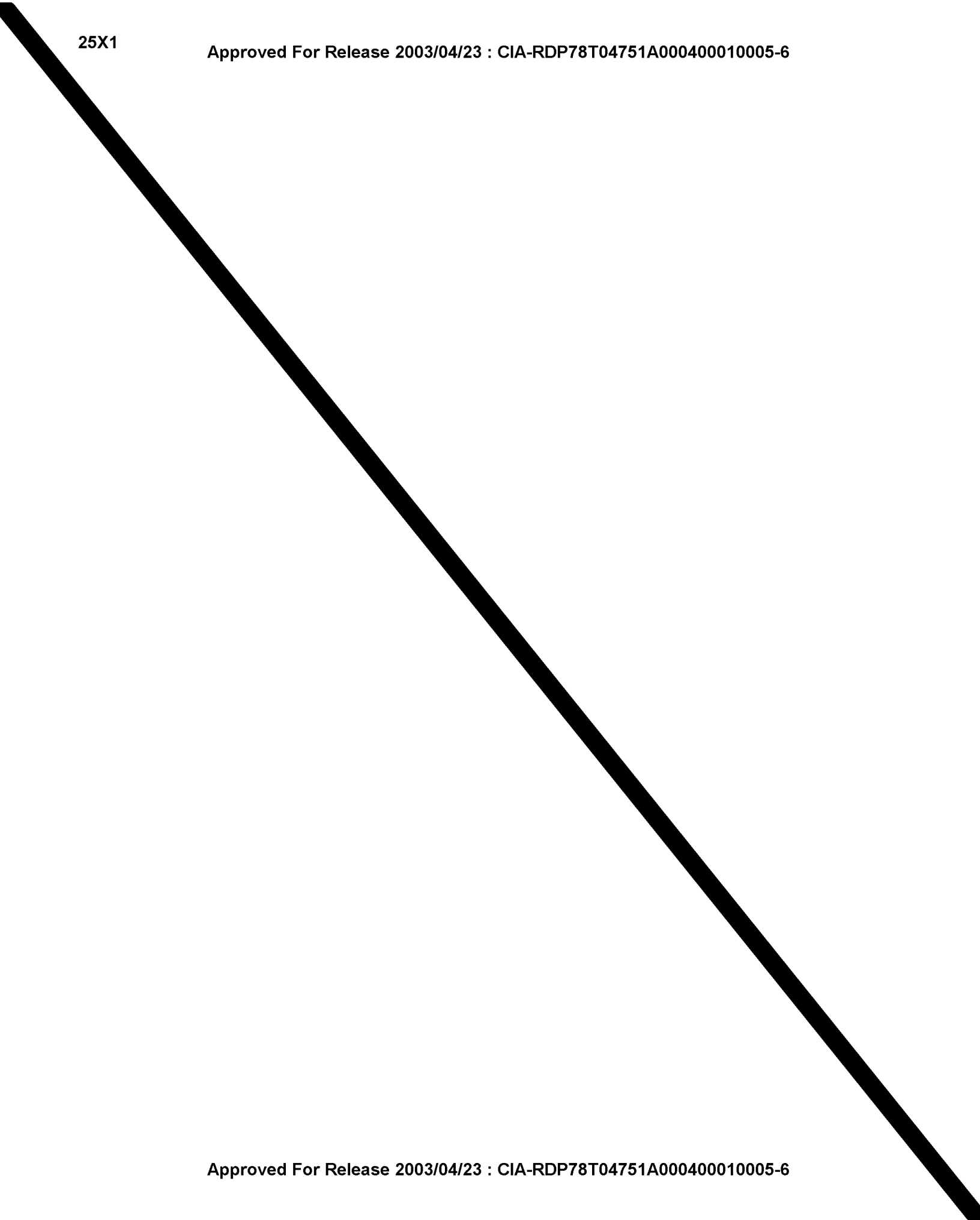


Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
57	Antenna farm, 12 nm SSW of Moscow and 3 nm WNW of Butovo	55°34'N/37°28'E 37UDB045605	See detailed analysis. 25X1
58	Antenna farm, 8.5 nm SSE of Moscow at the 19 km mark and on E side of Moscow/ Kaluga highway	55°37'N/37°31'E 37UDB061637	See detailed analysis.
59	Antenna farm, 6.5 nm SW of Moscow between Moscow/ Kaluga and Moscow/ Kiev highways and less than 1 nm W of Vorontsovo	55°39'N/37°31'E 37UDB071691	See detailed analysis.
60	Radio station, 10 nm SW of Moscow at Rumyantsevo	55°37'N/37°25'E 37UDB001654	Cannot be identified on [redacted] photography. 25X1
61	Radio station, 12 nm SW of Moscow and 1 nm N of Peredel'tsy	55°36'N/37°21'E 37UCB973644	Reported to contain one squirrel-cage antenna and 2 poles 50' high, spaced approx. 100-150' apart. Possible communications system for Vnukovo A/F. (See ground photo, Figure 100.) Cannot be identified on [redacted] photography.
62	Antenna farm, 16 nm WSW of Moscow and 2.5 nm WNW of Vnukovo Airfield	55°36'N/37°13'E 37UCB865635	See detailed analysis. 25X1

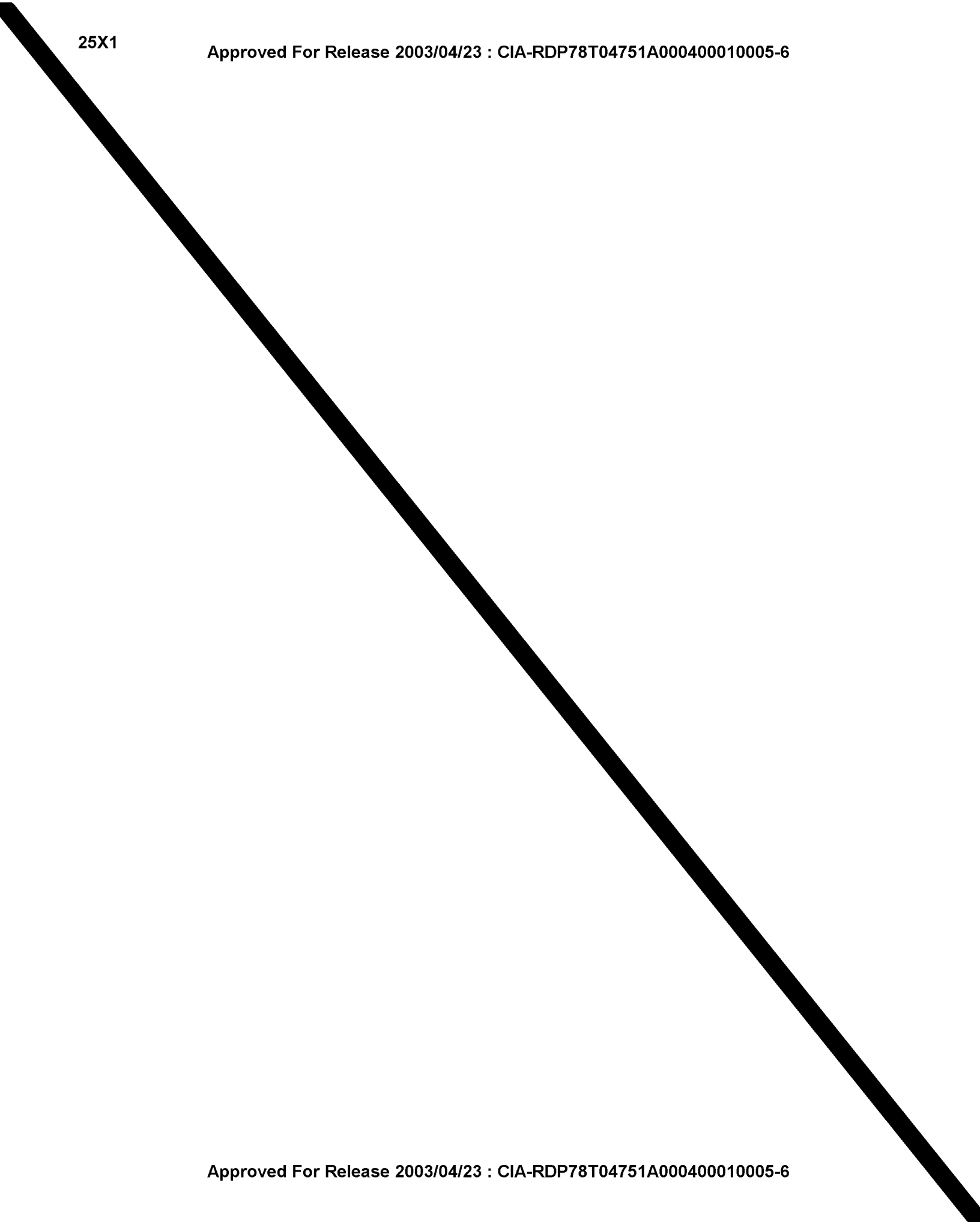
25X1

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

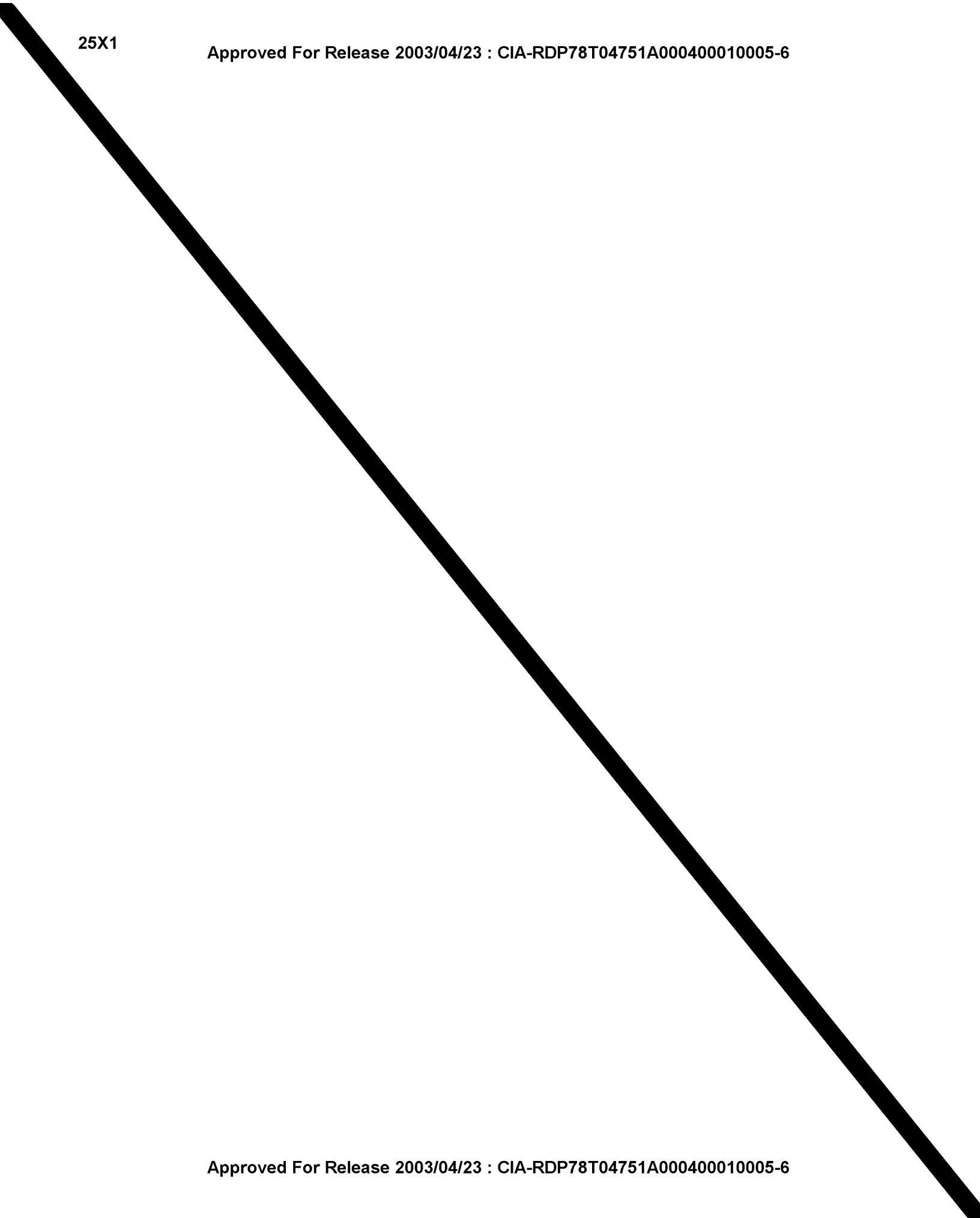
NO.	TYPE AND LOCATION	COORDINATES	REMARKS
63	Radio station, 23.5 nm ESE of Moscow and just S of Golitsyno	55°36'N/37°00'E 37UCB719634	Reported to contain 5 masts 100' high. One mast has two large vertical dipoles on top and an antenna in the shape of a half moon two thirds of the way up. Cannot be identified on [redacted] photography. 25X1
64	Radio station, 10.5 nm WSW of Moscow and at NW edge of Bakovka	55°41'N/37°20'E 37UCB956718	Reported to contain two antennas of unidentified type and two small one-story permanent buildings. Cannot be identified on [redacted] photography. 25X1
65	Radio station, 7 nm W of Moscow at west end of Troitskoye Shosse in Serebryanyy Bor	55°47'N/37°25'E 37UDB016826	Reported to contain a single tall radio antenna mast on top of a cottage-type brick building. (See ground photo, Figure 101.) Cannot be identified on [redacted] photography. 25X1
66	Radio station, 8 nm N of Moscow and directly W of Tushino Radio Plant	55°50'N/37°24'E 37UDB005878	Reported to contain a minimum of 25 masts. Cannot be identified on [redacted] photography. 25X1
67	Radio station, 12.5 nm W of Moscow and just S of Moscow/Istra highway	55°50'N/37°17'E 37UCB922889	See detailed analysis. 25X1 25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
68	Radio station, 18.5 nm WNW of Moscow and 1 km W of Dedovsk	55°51'N/37°06'E 37UCB810924	Reported to contain 36 masts with at least 4 rhombic antennas and 2 one-story brick buildings. Cannot be identified on [redacted] photography. 25X1
69	Possible radio station, 28 nm NW of Moscow near Istra and just S of railroad bridge over Istra River	55°53'N/36°51'E 37UCB655966	Reported to contain 5 masts with a building in the center. Possibly a navigational aid facility.
70	Antenna farm, 9 nm NW of Moscow and just S of branch canal of Moscow-Volga Canal	55°52'N/37°26'E 37UDB015925	Reported to contain approx. 60 masts varying from 40-80' in height. Cannot be identified on [redacted] photography. 25X1
71	Radio station, 9 nm NNW of Moscow near Korovino	55°53'N/37°29'E 37UDB062940	Cannot be identified on [redacted] photography. 25X1

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

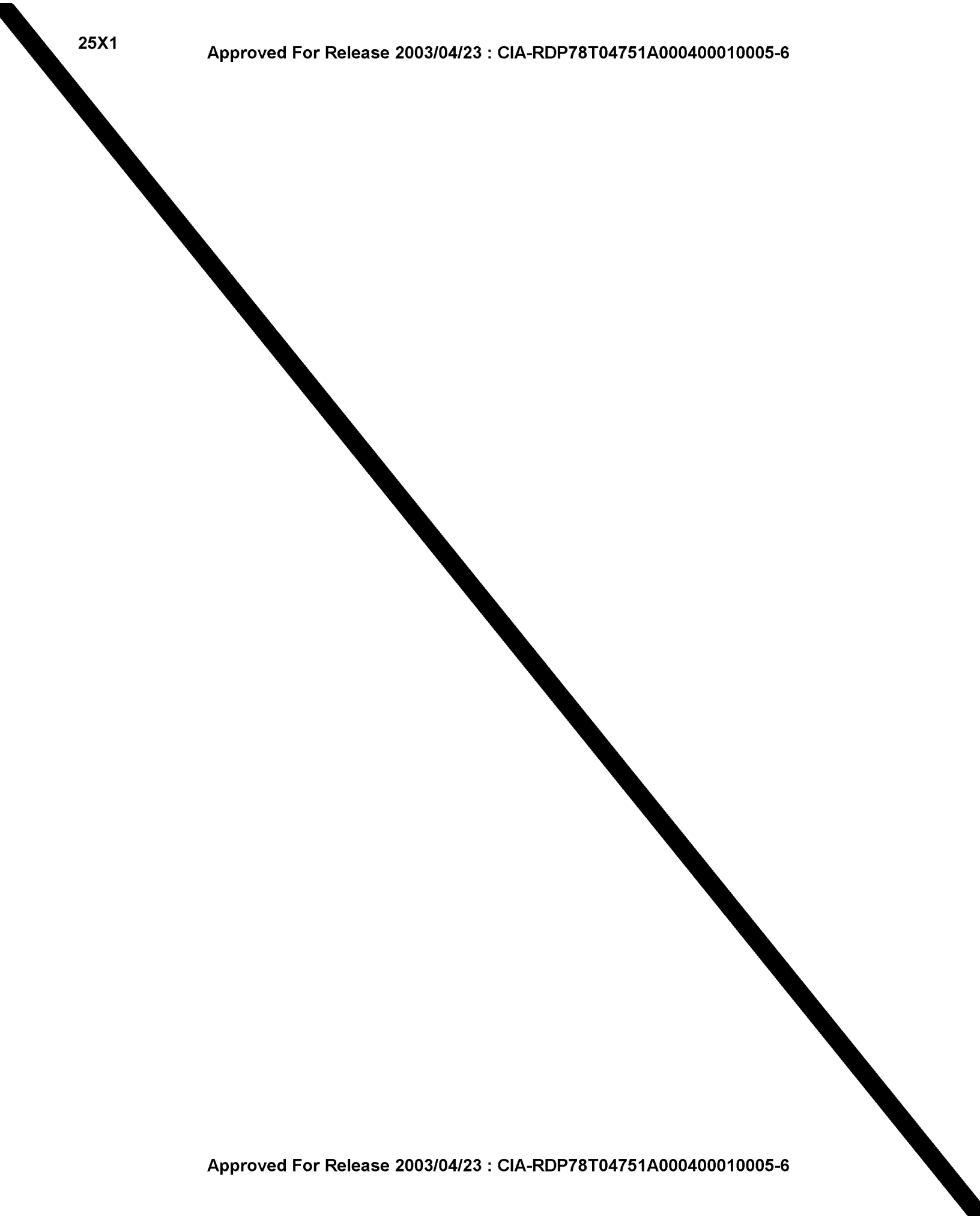
PIC/JR-8/59

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
72	Antenna farm, 11.5 nm NW of Moscow and 2 nm W of Khimki	55°53'N/37°23'E 37UCB998937	Reported to contain over 53 masts 90' high. Cannot be identified on [redacted] photography. Possibly the same as No. 70.
73	Radio station, 19.5 nm NW of Moscow near Kryukovo and 1/2 nm S of Leningrad-Moscow rail line.	55°58'N/37°11'E 37UCN867032	Reported to contain 30-35 irregularly spaced masts, 60-75' high. Cannot be identified on [redacted] photography.
74	Antenna farm, 26 nm NW of Moscow on W side of Moscow/Klin road	56°05'N/37°06'E 37UCN823162	Reported to contain 50-100 masts 50' high. Approx 4 km away are two masts approx. 300' high. Area contains administration and barracks-type buildings. Cannot be identified on [redacted] photography.

25X1

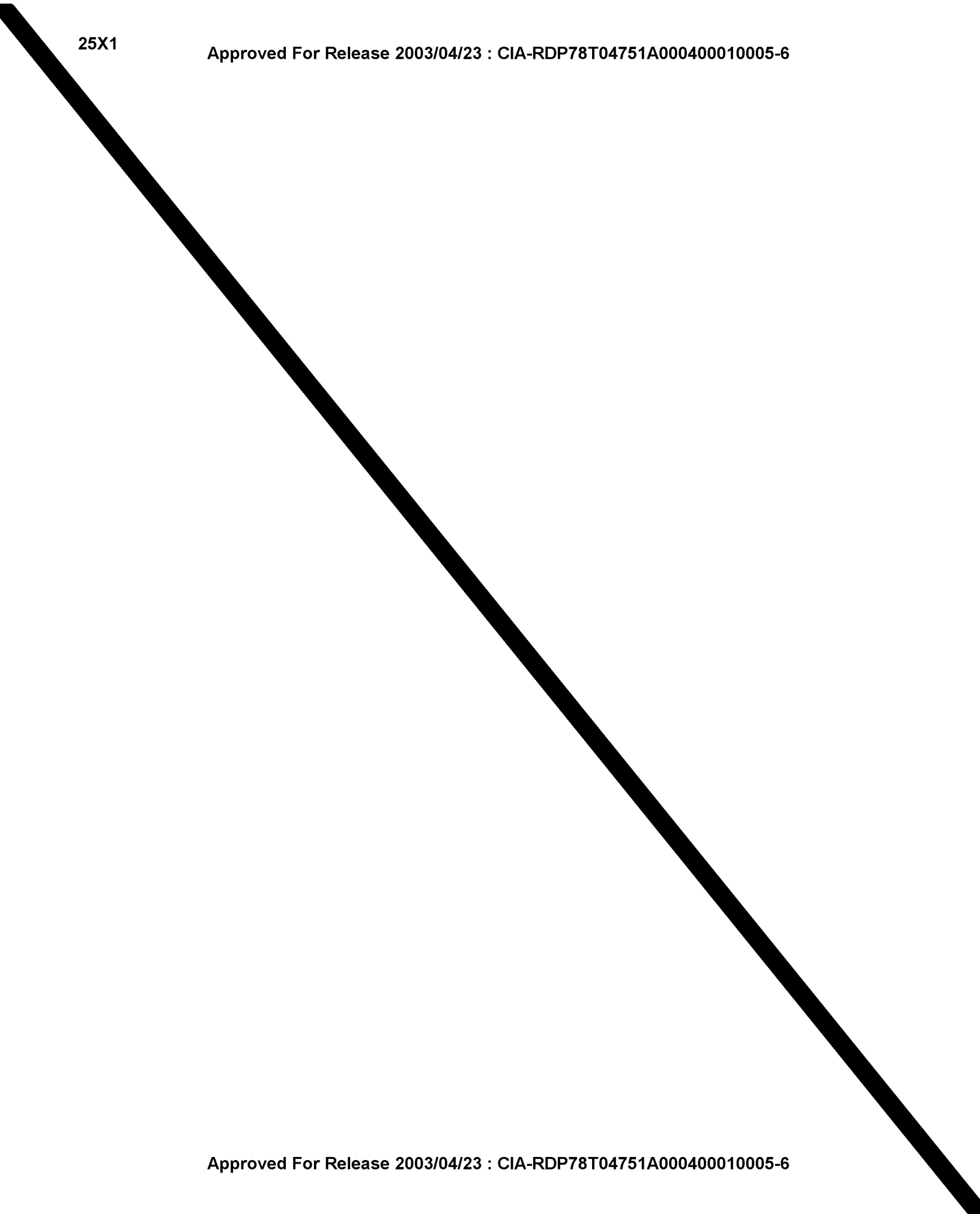
25X1

25X1



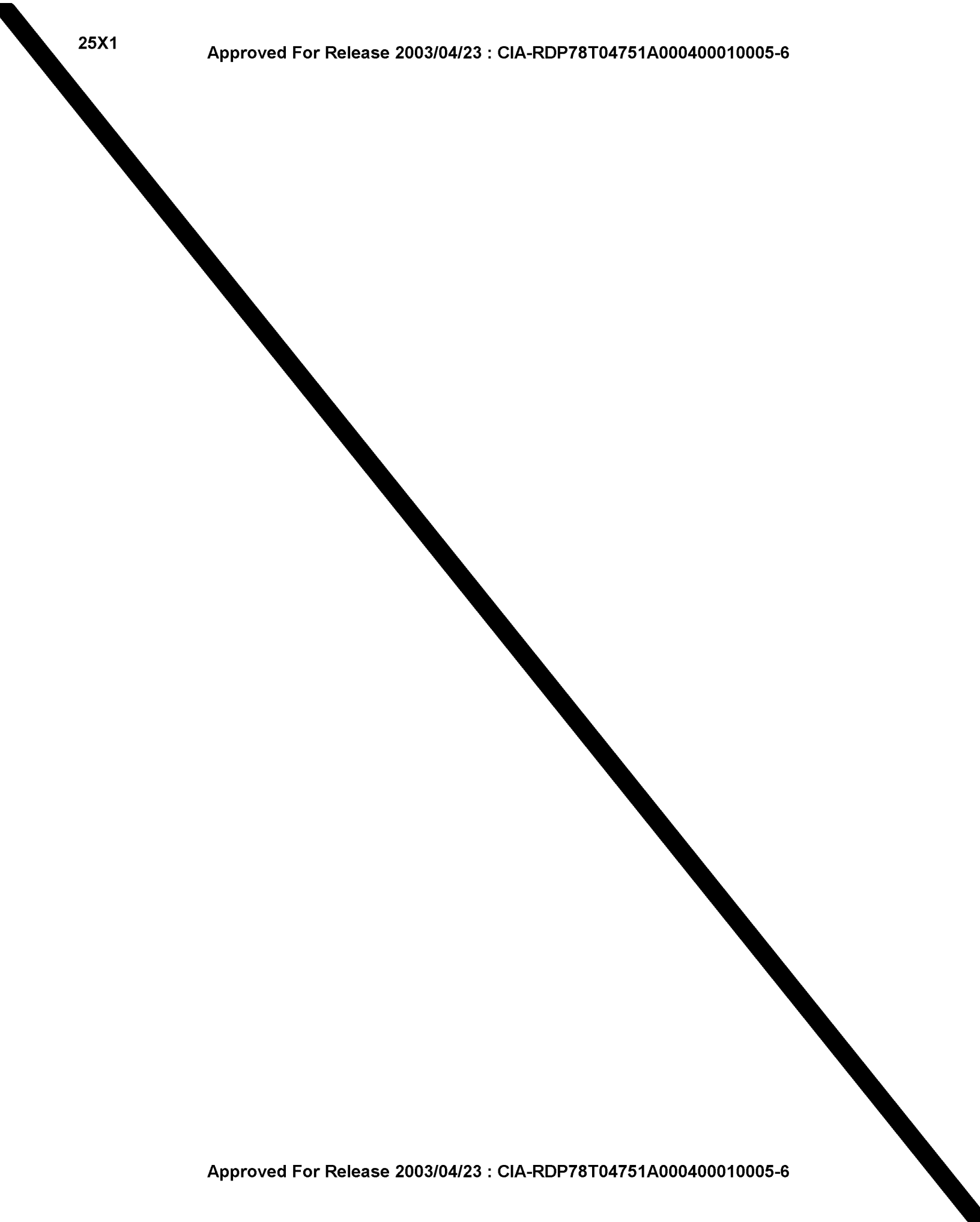
Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
75	Radio station, 35 nm NW of Moscow at Solnechnogorsk	56°11'N/36°58'E 37UCN745273	Reported to contain a VHF antenna mounted on top of fire station. Cannot be identified on [redacted] photography. 25X1
76	Radio station, 46 nm NW of Moscow at Klin	56°20'N/36°42'E 37UCN600450	Reported to contain one VHF antenna on top of fire station. Cannot be identified on [redacted] photography. 25X1
77	Possible radio station, 46.5 nm NW of Moscow and 1/4 nm NE of center of Klin	56°20'N/36°43'E 37UCN618458	Reported to contain two steel towers, 100-200' high, with unidentified aerials on top. (See ground photo, Figure102.) Cannot be identified on [redacted] photography. 25X1
78	Radio station, 5.3 nm NNW of the Kremlin on Listrennichnaya Alleya	55°50'N/37°33'E 37UDB097880	Reported broadcasting station cannot be identified on [redacted] photography. 25X1
79	Radio station, 4 nm N of the Kremlin and just E of Dmitrovskoye Shosse	55°48'N/37°35'E 37UDB120862	Reported radio station cannot be identified on [redacted] photography. 25X1
80	Radio station, 4 nm NNE of the Kremlin in Sokolnicheskiy Park	55°48'N/37°40'E 37UDB167850	Reported to contain approx. 18 masts 60 to 80' high, supporting rhombic or squirrel-cage antennas. Site has been located on GX photography but quality of photography precludes positive identification as a radio station.



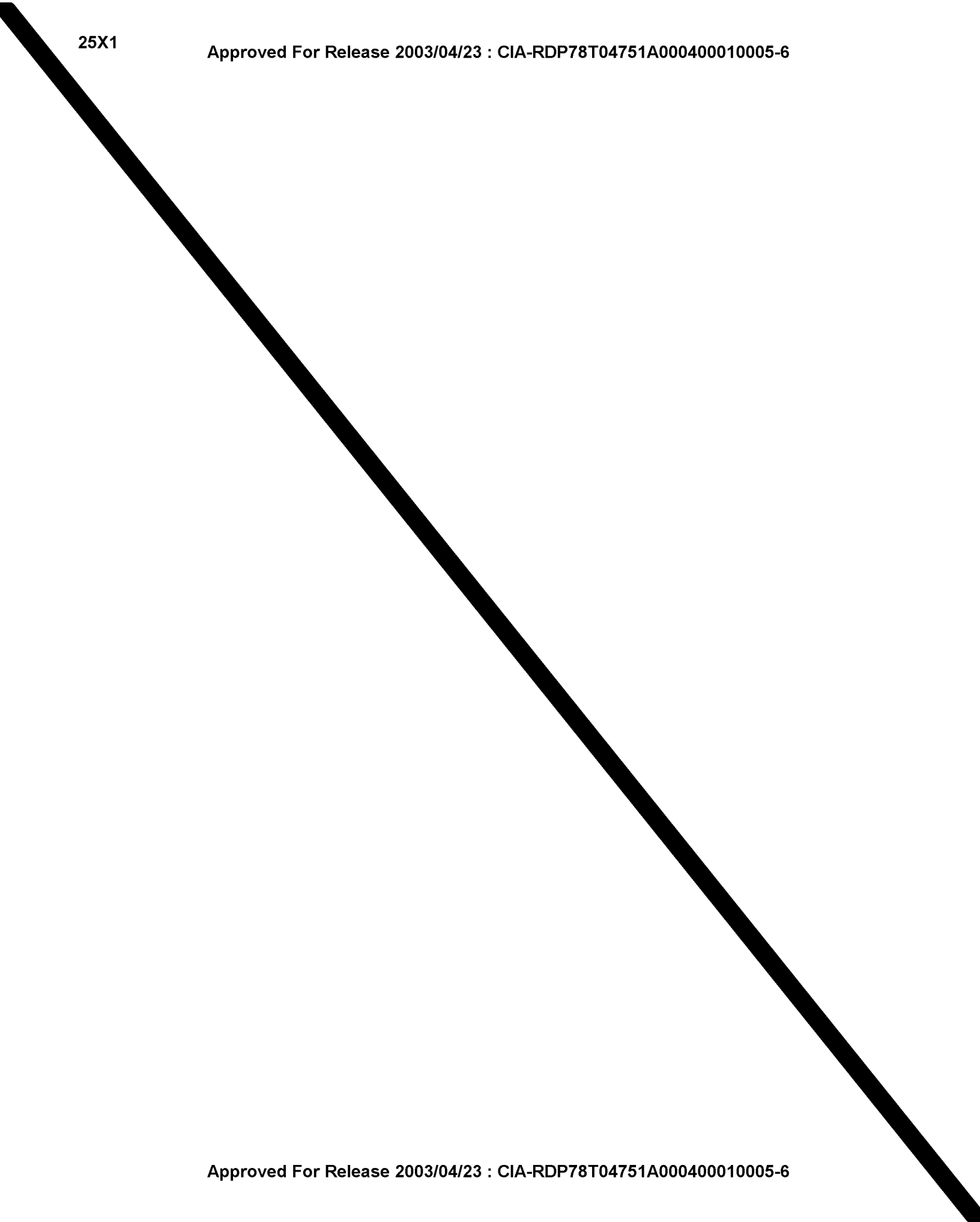
Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
81	Radio station, 4.5 nm NNE of the Kremlin on Bolshaya Olena Ulitsa	55°48'N/37°41'E 37UDB177851	Reported military radio station cannot be identified on photography. 25X1
82	Radio station, 3.3 nm NE of the Kremlin and opposite the entrance to Sokolnichesky Park	55°47'N/37°40'E 37UDB172830	Reported to contain one VHF antenna mounted on top of fire station. Cannot be identified on photography 25X1 25X1
83	Radio station, 5 nm NE of the Kremlin and just N of Izmaylovskoye Shosse	55°47'N/37°45'E 37UDB215830	Reported radio station has been located on photography, but quality of photography precludes positive identification.
84	Radio station, 1.5 nm NE of the Kremlin at Sadovskaya Spasskaya	55°46'N/37°38'E 37UDB153808	Reported to contain a VHF antenna located on top of building housing the Ministry of Transport Machine Building. Three probable VHF antennas are visible on ground photography and the building can be identified on photography. (See ground photo, Figure 103.)
85	Radio station, 1.5 nm NE of the Kremlin at corner of Novaya Basmannaya and Sadovaya Chernogr	55°46'N/37°39'E 37UDB155807	Reported to contain 2 probable VHF antennas on top of Ministry of Railways Building. Building can be identified on photography. 25X1 25X1
86	Radio station, 1.5 nm NE of the Kremlin in block between Kharitonon Malaya Ulitsa and Kozlovsk B	55°46'N/37°39'E 37UDB153806	Reported to contain one radio antenna located on the Naval Komandatura building. Cannot be identified on photography. 25X1 25X1



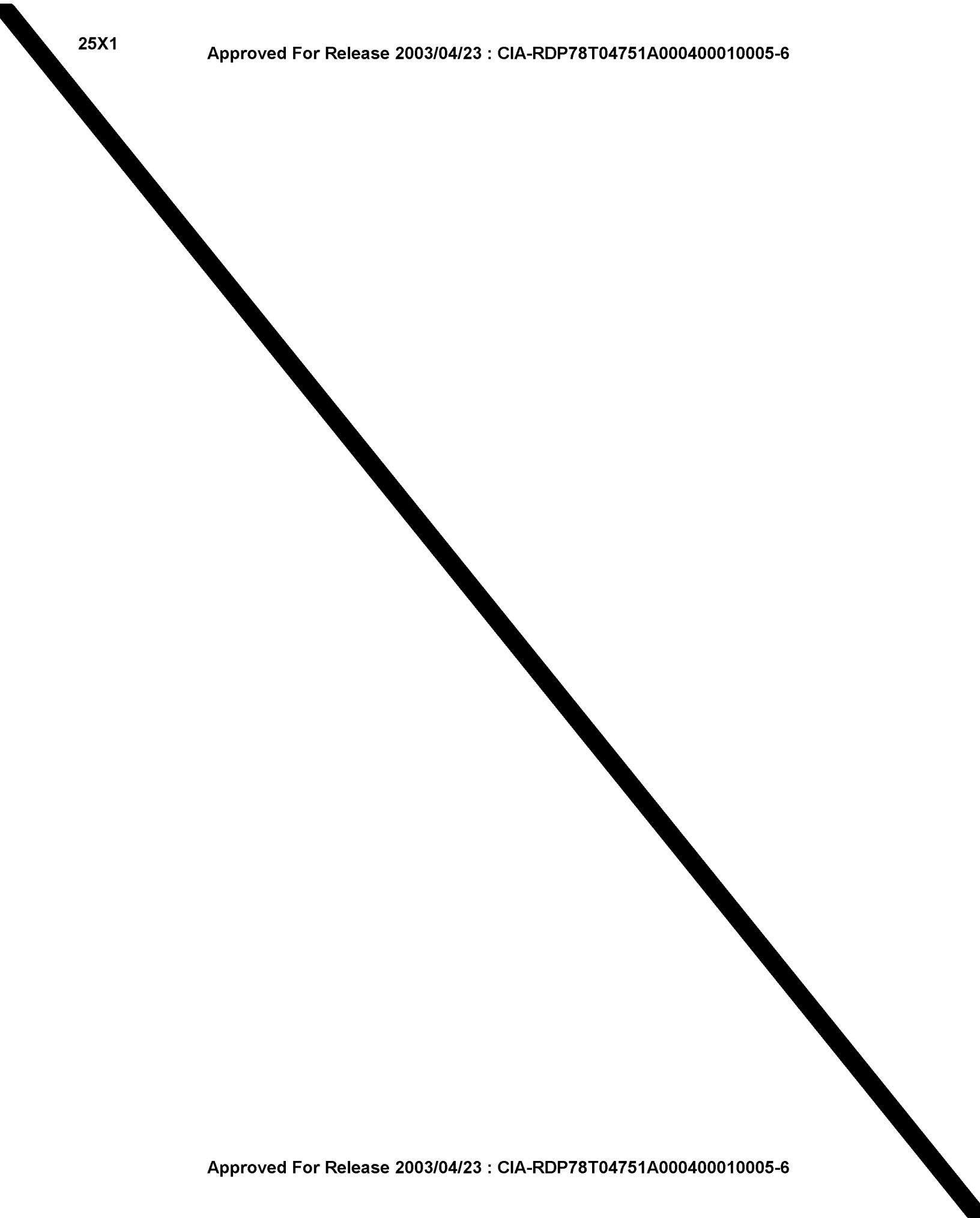
Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
87	Radio station, 2 nm NE of the Kremlin at Kasakova Ulitsa No.20	55°45'N/37°40'E 37UDB168798	Reported to be an experimental radio station. Site has been located on photography, but quality of photography precludes positive identification as a radio station.
88	Radio station, 3.5 nm E of the Kremlin at Entuziastov Shosse No. 109	55°45'N/37°43'E 37UDB195785	Reported to contain one VHF antenna mounted on top of fire station. Cannot be identified on photography.
89	Radio station, 1 nm E of the Kremlin near corner of Chkalova Ulitsa and Nikoloyamsk Nab	55°44'N/37°39'E 37UDB159783	See detailed analysis. 25X1 25X1
90	Radio station, 0.6 nm SE of the Kremlin at Osipenko Ulitsa No. 37	55°44'N/37°38'E 37UDB146775	Reported to contain one VHF antenna mounted on top of fire station. Cannot be identified on photography. 25X1
91	Radio station, 1.5 nm SE of the Kremlin at corner of Kamenschiki Bolshaya Ulitsa and Kamenschiki Malaya Ulitsa	55°44'N/37°39'E 37UDB156765	Reported to contain a VHF antenna mounted on top of fire station. Cannot be identified on photography. 25X1
92	Radio station, 1 nm S of the Kremlin on Bolshoy Spassobolranovsky Per.	55°44'N/37°37'E 37UDB138768	Reported broadcasting station cannot be identified on photography. 25X1



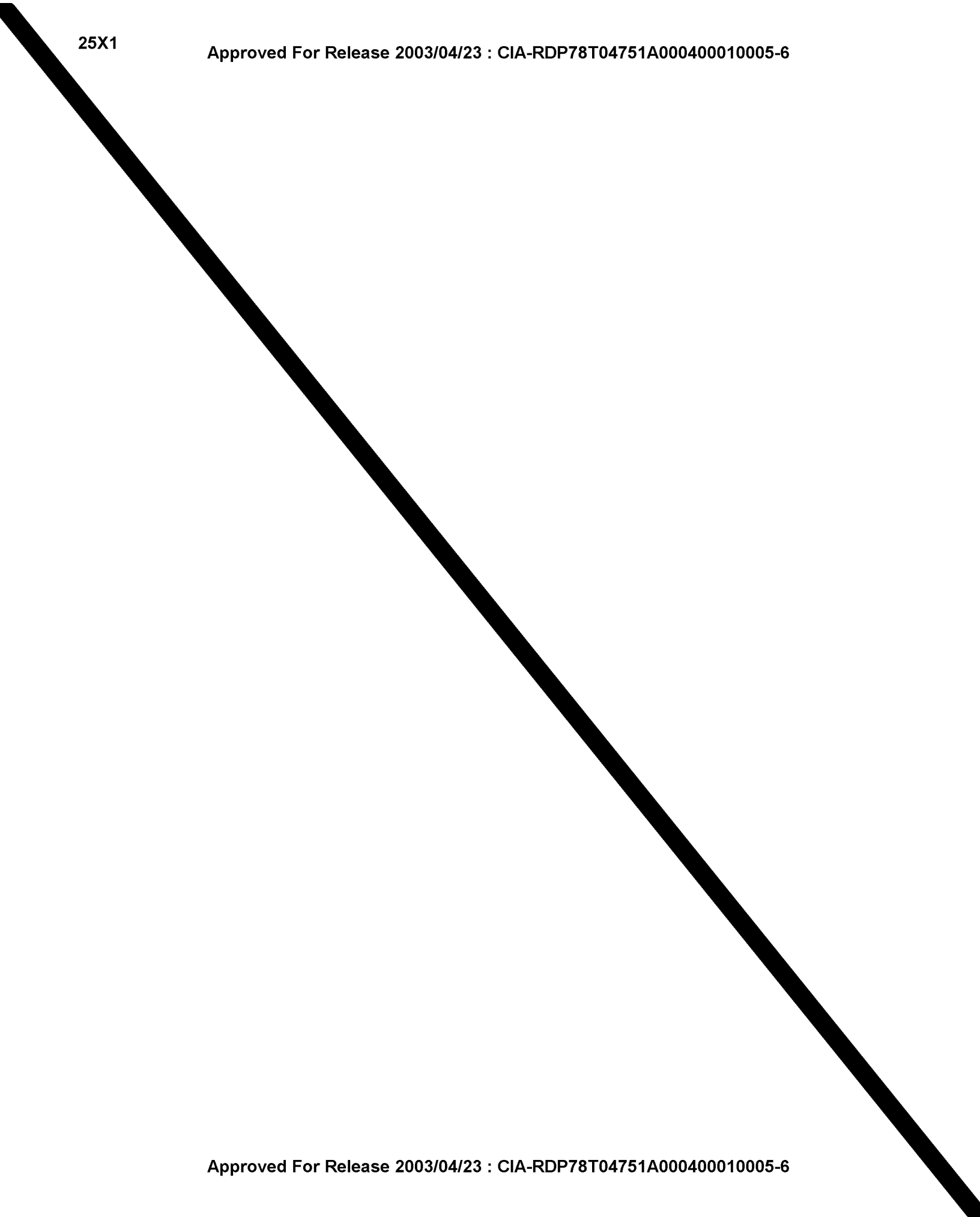
Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
93	Radio station, 1.7 nm S of the Kremlin on a street parallel with the lower part of Vostochnaya Ulitsa	55°42-N/37°39'E 37UDB158742	Reported to contain one VHF antenna mounted on top of fire station. Cannot be identified on [redacted] photography.
94	Television station, 1.5 nm S of the Kremlin at corner of Drovyanoy Pl. and Sirotskiy P.	55°43'N/37°36'E 37UDB131748	See detailed analysis. 25X1 25X1
95	Radio station, 2 nm S of the Kremlin at Donskaya Ulitsa No. 68	55°43'N/37°36'E 37UDB124748	Reported to contain a VHF antenna mounted on top of fire station. Cannot be identified on [redacted] photography.
96	Radio station, 1.5 nm S of the Kremlin and just off Krymsky val Ulitsa	55°43'N/37°36'E 37UDB128761	Reported to contain a VHF antenna mounted on top of fire station. Cannot be identified on [redacted] photography.
97	Radio station, 2 nm SW of the Kremlin on Funzenskaya Nab	55°43'N/37°35'E 37UDB110751	Reported probable VHF antenna on top of the Ministry of Defense building. Cannot be identified on [redacted] photography.
98	Radio station, 3.5 nm SW of the Kremlin on grounds of Moscow State University	55°42'N/37°32'E 37UDB082734	See detailed analysis. 25X1 25X1
99	Probable radio station, 1.6 nm SW of the Kremlin near corner of Pirogovskaya Ulista and Devich. Polya Pr.	55°44'N/37°34'E 37UDB108772	Reported radio tower cannot be identified on [redacted] photography. 25X1 25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

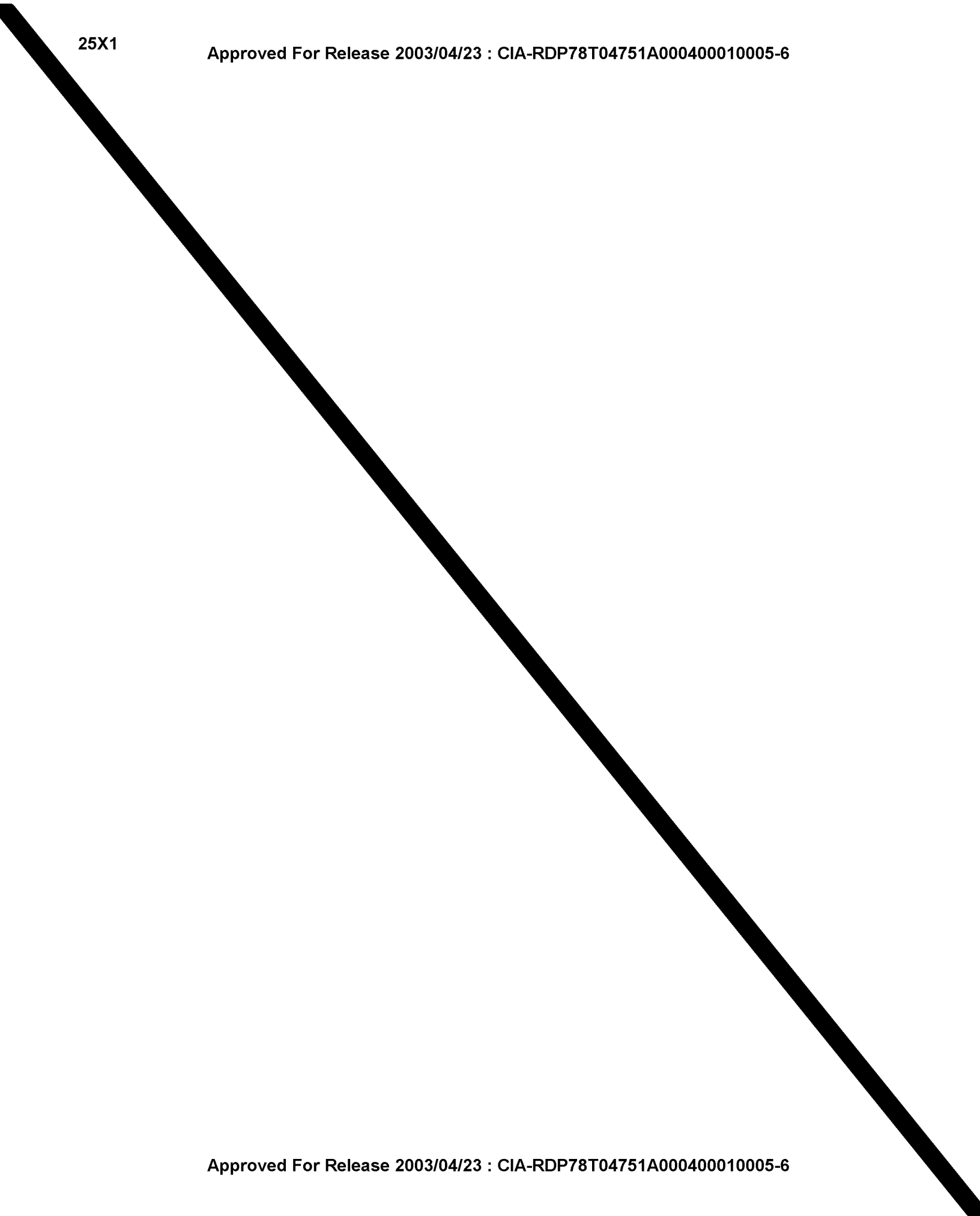
NO.	TYPE AND LOCATION	COORDINATES	REMARKS
100	Radio station, 0.7 nm SW of the Kremlin on corner of Chisty Per and Ulista Kropotkinskaya	55°44'N/37°35'E 37UDB118778	Reported to contain 4 VHF antennas mounted on top of fire station. Cannot be identified on [redacted] photography. 25X1
101	Radio station, 1.2 nm W of the Kremlin on Glasovskovo Ulitsa	55°45'N/37°35'E 37UDB113778	Reported broadcasting station. Cannot be identified on [redacted] photography. 25X1
102	Radio station, 0.3 nm W of the Kremlin at Sobinovsky Perevlok No. 6	55°45'N/37°36'E 37UDB128790	Reported to contain one VHF antenna mounted on top of fire station. Cannot be identified on [redacted] photography.
103	Radio station, 0.3 nm NW of the Kremlin at Gorkogo Ulitsa No. 7	55°45'N/37°36'E 37UDB130791	See detailed analysis. 25X1
104	Radio station, reported to be located 3 nm W of the Kremlin	55°44'N/37°32'E 37UDB088784	See detailed analysis.
105	Radio station, 2.5 nm NW of the Kremlin near corner of Khoroshevskoye Shosse and Begovaya Ulitsa	55°46'N/36°33'E 37UDB092813	Reported broadcasting station. Cannot be identified on [redacted] photography. 25X1 25X1
106	Radio station, 3.5 nm WNW of the Kremlin and just S of Moscow Central Airfield	55°46'N/37°31'E 37UDB070820	Reported radio towers. Cannot be identified on [redacted] photography. 25X1 25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

NO.	TYPE AND LOCATION	COORDINATES	REMARKS
107	Antenna farm, 5 nm WNW of the Kremlin and 1.5 nm W of Moscow Central Airfield	55°47'N/37°29'E 37UDB050830	See detailed analysis.
108	Radio station, 3.3 nm NW of the Kremlin and just NW of Dynamo Stadium	55°47'N/37°33'E 37UDB093837	See detailed analysis.
109	Radio station, 4 nm NW of the Kremlin at Leningradskye Shosse No. 110	55°48'N/37°31'E 37UDB068847	Reported to contain 2 VHF antennas mounted on top of fire station. Cannot be identified on [redacted] photography. 25X1

25X1



Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6

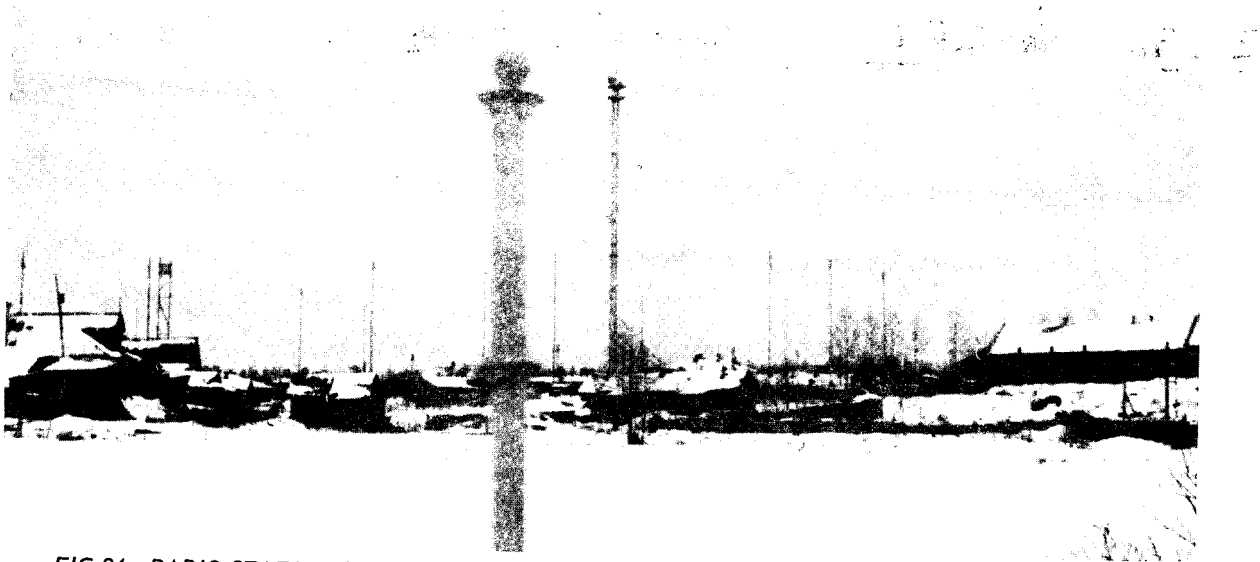


FIG.94. RADIO STATION (NO. 21) View of radio station at Babushkin showing 16 guyed stick masts and one guyed sectional steel mast with a microwave parabola mounted on top (1956).

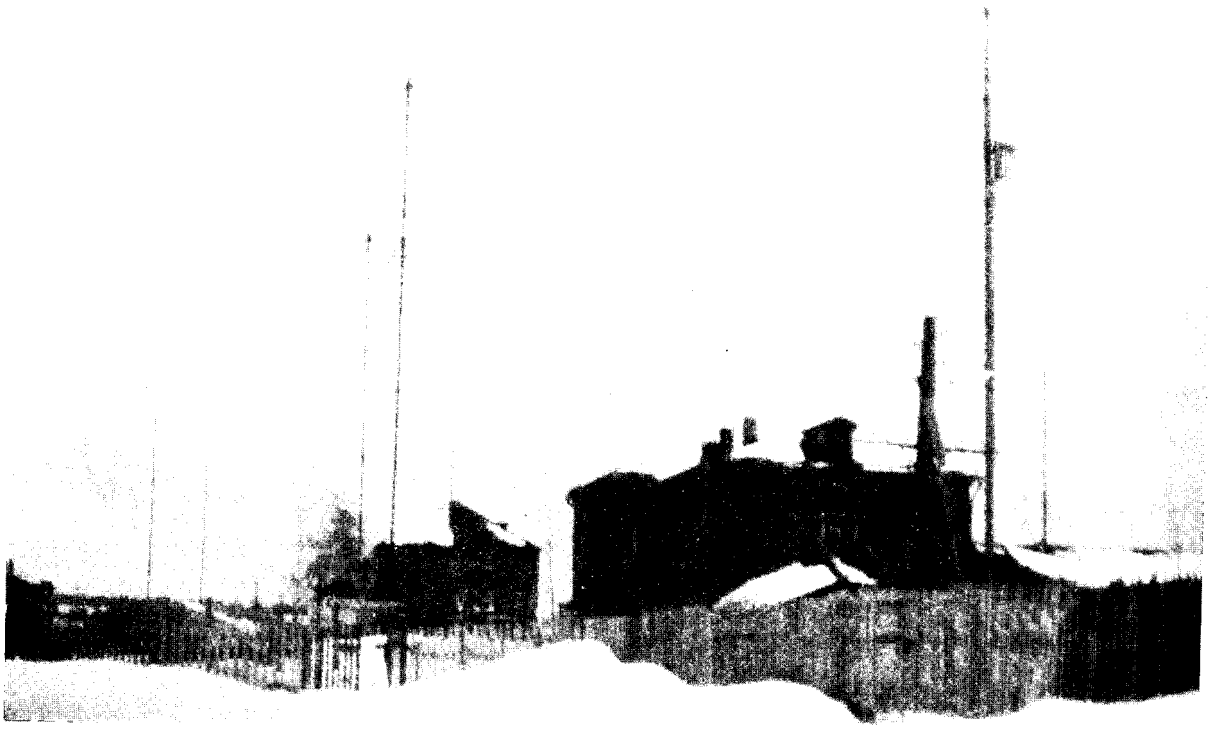


FIG.95. RADIO STATION (NO. 22) View of secondary naval air communications station at Izmaylovo A/F with 8 guyed stick masts and one control building (1956).

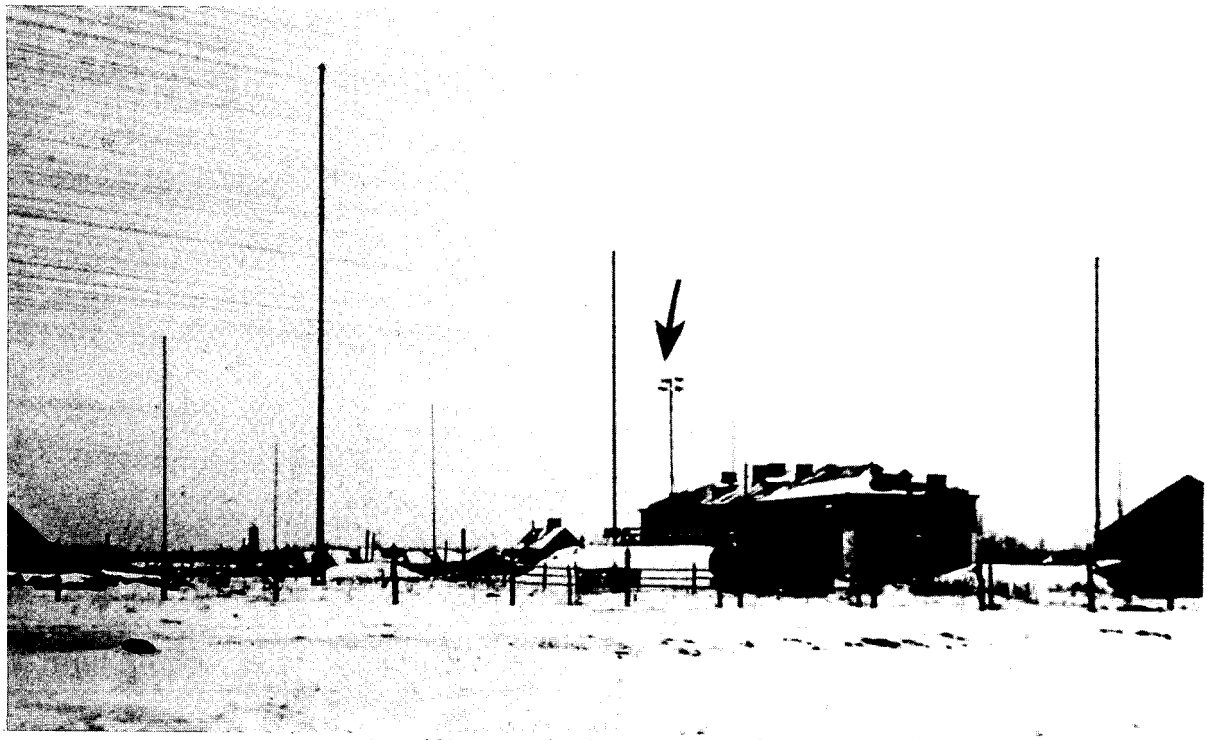
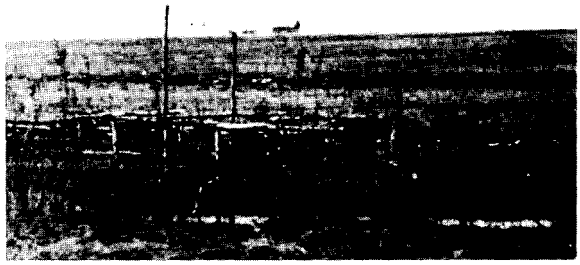


FIG. 96. RADIO STATION (NO. 23) View of radio station NE of Izmaylovo A/F with 8 guyed stick masts, one mast with microwave horns mounted on top, and control building (1952).

FIG. 97. RADIO STATION (NO. 42) View of radio station just north of Serpukhov with five guyed stick masts and one control bldg. (1957).



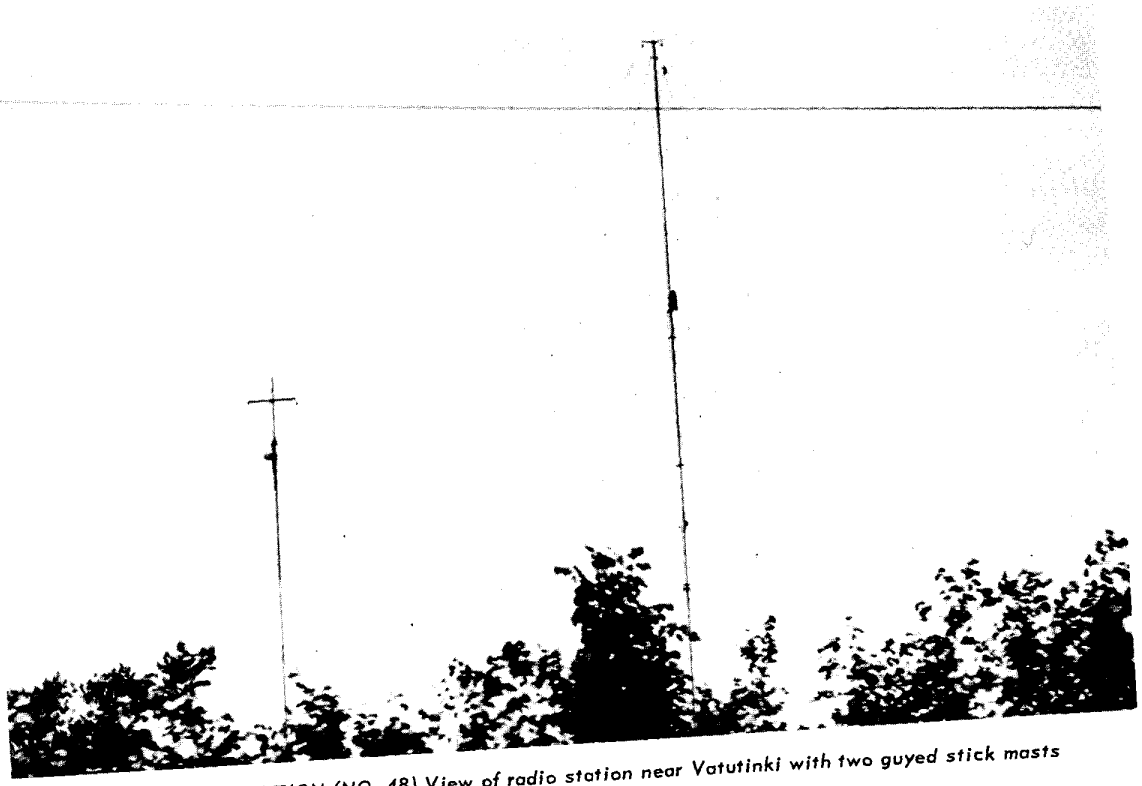


FIG.98. RADIO STATION (NO. 48) View of radio station near Vatutinki with two guyed stick masts and a horizontal dipole antenna (1957).

FIG.99. ANTENNA FARM (NO. 55) View of one side of an antenna farm just south of Voskyesenskoye with approx. 14 stick masts visible (1958).

25X1

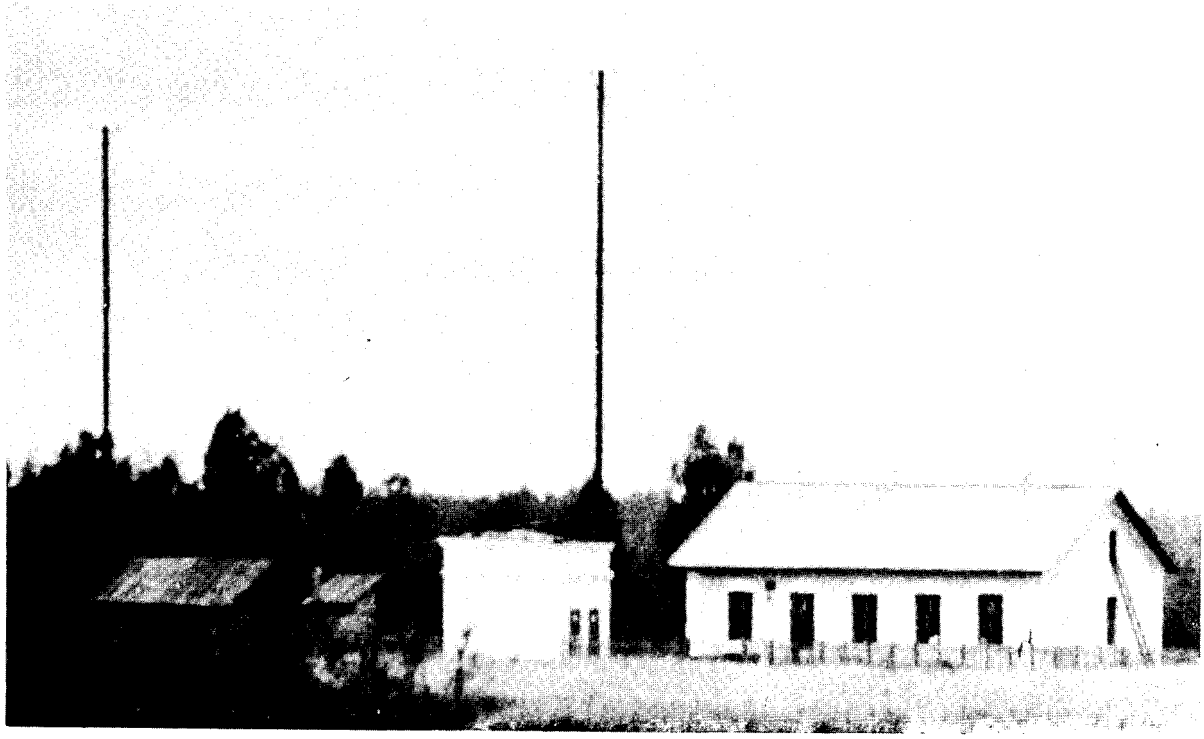


FIG.100. RADIO STATION (NO. 61) View of radio station north of Peredel'tsy with two guyed stick masts and control building (1951).

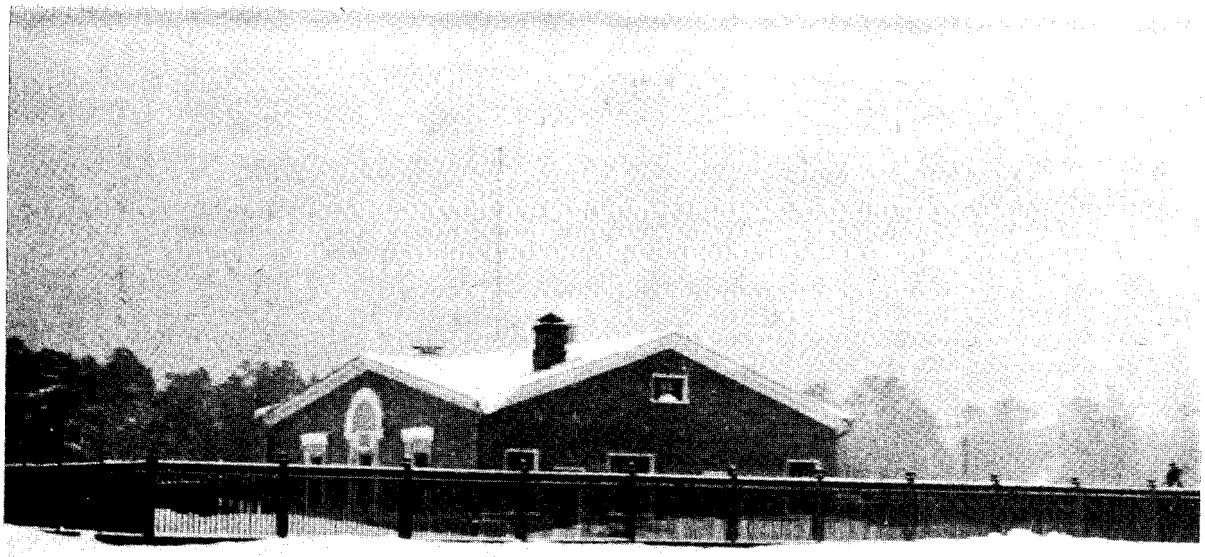


FIG.101. RADIO STATION (NO. 65) View of radio station on west side of Moscow with one guyed stick mast and control building (1956).

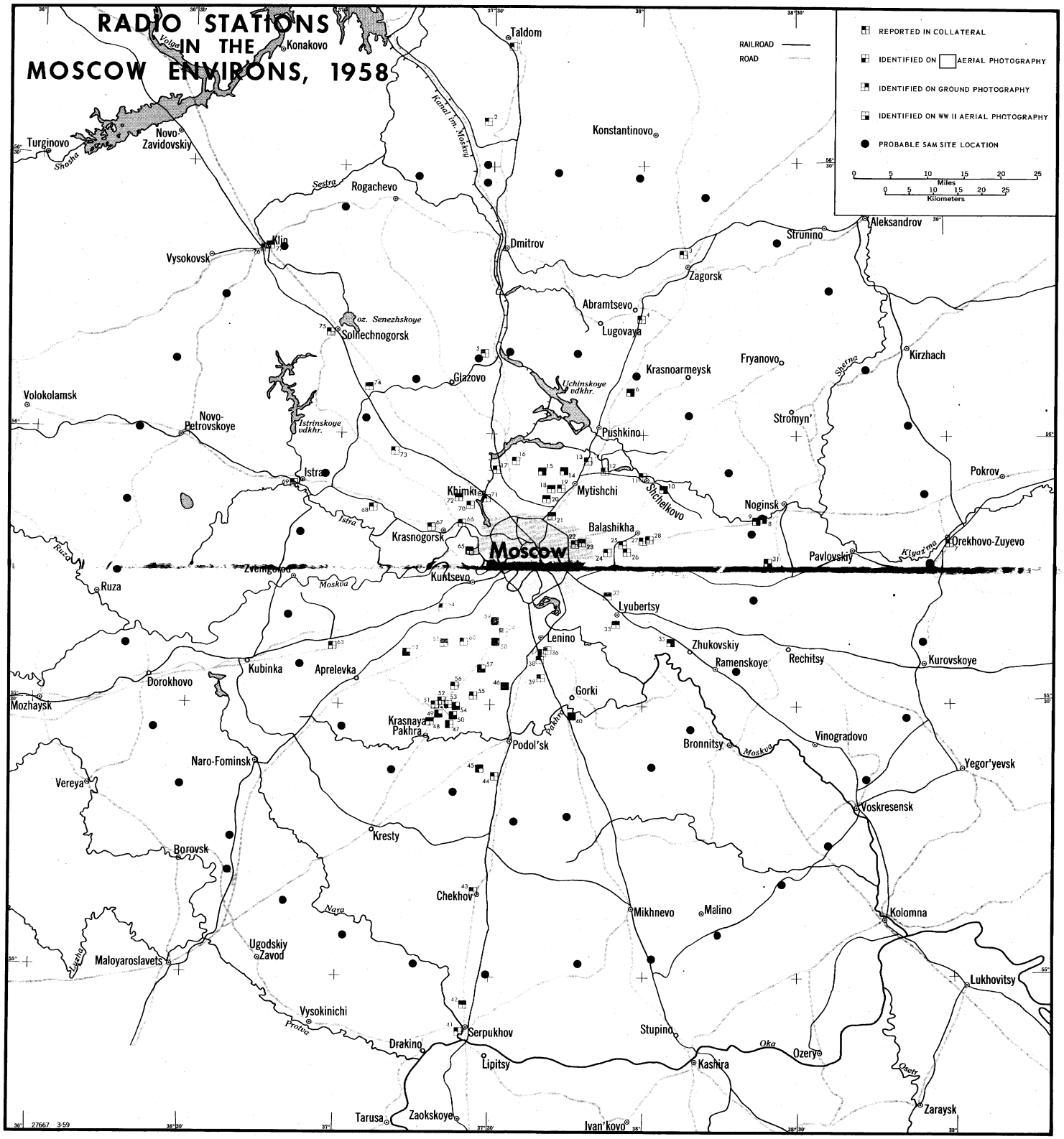
PIC/JR-8/59 25X1

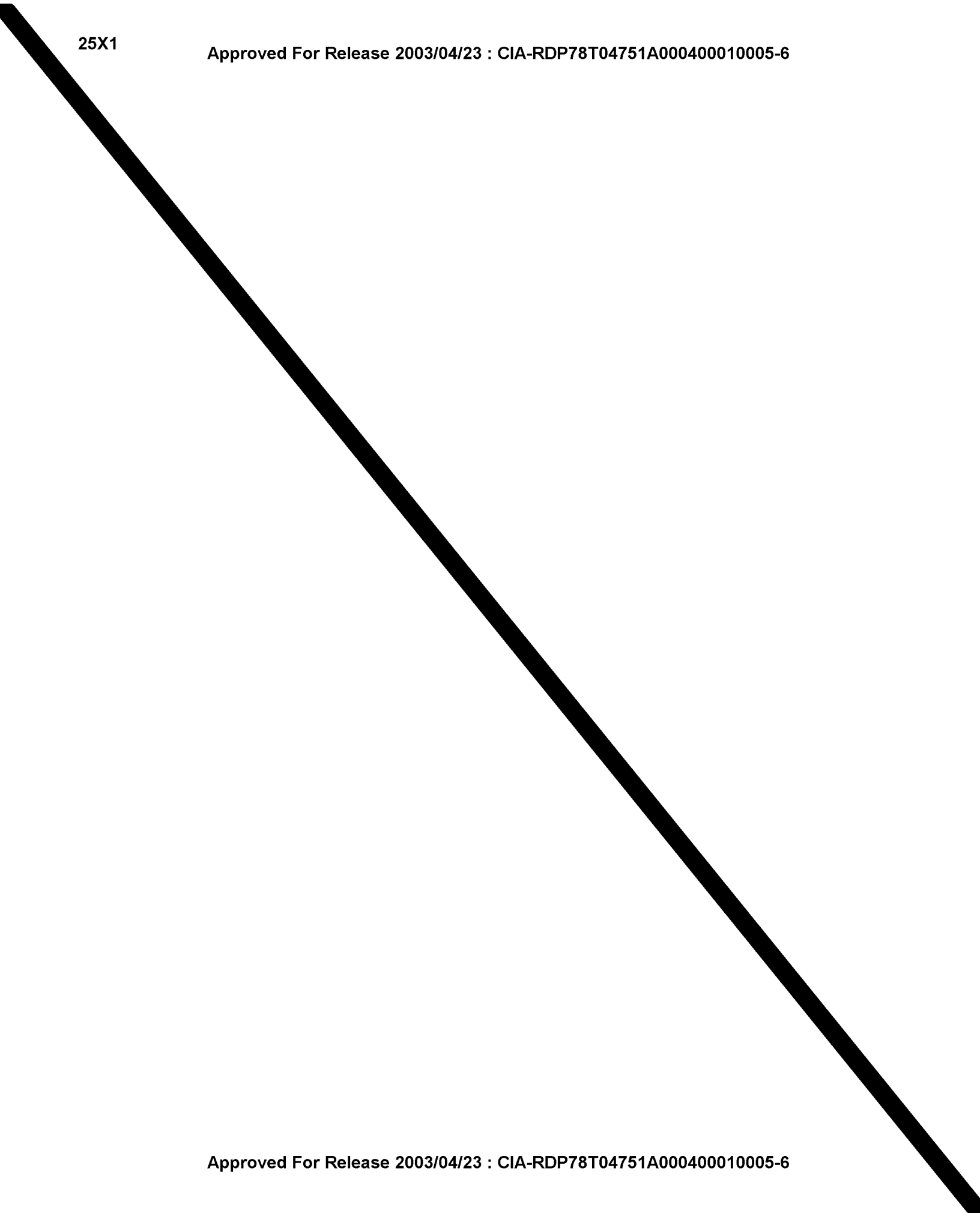
FIG.102. POSSIBLE RADIO STATION (NO. 77) View of possible radio station ¼ mile NE of Klin with two self-supporting steel towers (1956).

FIG.103. MOSCOW RADIO STATION (NO. 84) View of the building housing the Ministry of Transport Machine with three probable VHF antennas and one microwave parabola mounted along the sides of the building (1956).

25X1

RADIO STATIONS IN THE MOSCOW ENVIRONS, 1958





Approved For Release 2003/04/23 : CIA-RDP78T04751A000400010005-6